The Builder.

VOL. LXIX. NO. 2757. DECEMBER 7, 1895.

ILLUSTRATIONS.

Part of West Door, Reims.—Drawn by Mr. G. C. Horsley ..... *Single-Page Photo-Litho.*
Buttresses, St. Étienne le Vieux, Caen.—Drawn by Mr. G. C. Horsley ..... *Single-Page Photo-Litho.*
Bedford Court Mansions.—Mr. Allan F. Vigers, Architect ..... *Double-Page Photo-Litho.*
Stables, Graythwaite Hall, Windermere.—Mr. R. Knill Freeman, F.R.I.B.A., Architect ..... *Double-Page Ink-Photo.*
Small Country Houses.—Mr. T. W. Cutler, F.R.I.B.A., Architect ..... *Double-Page Photo-Litho.*

Blocks in Text.

Sketches illustrating Article on Pre-Conquest Architecture in England.....Page 411
Country House at Bar Harbour, Maine, U.S.A..... „ 414
Pulpit, St. John's Church, Boscombe ..... „ 416
Hôtel Métropole, Cromer: Messrs. G. J. and F. W. Skipper, architects ..... „ 418
Details of Fireplace; and a Chair ..... Page 425
Plan, Hôtel Métropole, Cromer..... Page 419
Plan, Stables, Graythwaite Hall ..... „ 421
View of the Trinity Almshouses, Mile End-road ..... „ 423
Old Fireplace: Guildford ..... „ 424

CONTENTS.

Architect or Dilettante?..... 409
Notes on Pre-Conquest Architecture in England.—VI. 410
Notes 412
Letter from Paris 413
Country House at Bar Harbour, Maine 414
Notes on Some Recent Restorations in Belgium 414
Dr. Rowand Anderson on Architectural Education 415
Pulpit, St. John's Church, Boscombe..... 416
Institution of Civil Engineers 416
Architectural Union Company, Limited..... 417
Hôtel Métropole, Cromer 418
The Builders' Benevolent Institution 418
The Berlin Industrial Exhibition 419
The Royal Institute of British Architects 419
The London County Council..... 420
Competitions 420
Part of West Door, Reims..... 421
Buttresses, St. Etienne le Vieux, Caen..... 421
Bedford Court Mansions..... 421
The Stables, Graythwaite Hall, near Windermere 421
Small Country Houses..... 421
New By-laws as to Subways by the London County Council.... 421
The Trinity Almshouses, Mile End 422
Architectural Societies 422
Old Fireplace, Guildford..... 424
The London County Council on Soil-pipe Trapping 424
The Trinity Corporation of Deptford-le-Stroud 424
Shoreditch Free Library and Baths Competition 424
Student's Column: Metals used in Building.—XXIII. 424
Obituary..... 426
General Building News 426
Stained Glass and Decoration 427
Foreign and Colonial 427
Miscellaneous 427
Legal 429
Meetings 429
Recent Patents 430
Some Recent Sales of Property 430
Tenders..... 431

Architect or Dilettante?

WE seem destined never to have an end of the dispute as to what an architect is, what he is to do, and how he is to be educated; and Dr. Rowand Anderson takes up the cudgels afresh against the Institute of Architects and all its works, in his Presidential Address to the Edinburgh Architectural Association, the portion of which dealing with this subject is printed on another page.

The Edinburgh Association, we learn from the address, is, in comparison with other architectural societies in the kingdom, a peculiarly constituted body; membership of it is not restricted to architects, but it includes sculptors, painters, and artists in other branches of work, who are equally eligible as members with the architects. Such a Society should unquestionably contain in itself the elements for a great deal of most interesting discussion and exchange of opinions on artistic subjects, but we fail to see why it should in that case be called an "Architectural Association," which, by the President's own showing, it is not: it should rather be the "Edinburgh Association of Artists"; being in fact a Society analogous to that in London known as the "Art-workers' Guild," which it resembles also in another sense, in that the Guild is also permeated by the same dislike to the professional architect and to professional societies, though as a matter of fact one or two members of the Institute are to be found among its ranks. We had better have societies properly defined in accordance with their real constitution and objects.

Dr. Anderson repeats all the arguments that we have heard again and again for some years back against the Examinations of the Institute, and in fact against the existence of any Institute of Architects at all, and repeats also the questionable argument to the effect that none of the buildings we most admire were built by architects. As we have more than once urged, the statement itself is a more than doubtful one, and is probably quite at variance with fact in regard to a great many celebrated buildings, if we had the means of getting at the actual facts. But in any case, if Dr. Anderson's convictions on that point are so strong, why, it may surely be asked, does he not cease to profess to be an architect himself? That is the experience we have had repeatedly in regard to those who affirm so strongly, in effect, that architects are a mistake, a nuisance to art; that architecture is not a profession at all. We do not find that the more prominent architects who profess this view differ at all in their practice from other people; they keep offices, which they do not even call "studios," and write letters to their clients like other people; so that one is rather lead to think that the whole matter is a question of names more than anything else.

Dr. Anderson refers to the usual Architect's Registration Bill which is said to be coming before Parliament, a bogey which is annually held up to us, but which has almost ceased to frighten any one by this time. The form which this Bill has now taken, and the results which are desired and expected from it, which were brought into new light by a circular issued a short time since to those members of the profession who it was supposed could be caught by it, appear so preposterous that a mere statement of the case ought to be sufficient to condemn it in the eyes of any sensible and educated person, and it seems probable that the four Members of Parliament who have backed the Bill have been misled as to its real object and the effect which it would actually have. But Dr. Anderson thinks it may have some support, apparently because he recognises that there is a certain desire on the part of the public that they should have some proof or conviction that when a man calls himself architect he really understands the business. If Dr. Anderson considers that such is the case, that there is beginning to be a kind of public demand for a test as to architectural ability, and that it may become impossible to evade it—and that is apparently his impression—it is really astonishing that he should not see that the system of examination for entrance to the Institute, if generally supported, is the one system before us which could gradually provide against that public demand *without* the mischievous consequences, and the lowering of the standard of the architectural profession, which would follow from the system, proposed by the Bill in question, of recognising and endowing with a status all existing practising architects at one swoop. The Institute system could only produce its effect gradually, but its result in the end ought to be that whatever good effect can be produced by registering architects would be produced without the bad effect which would follow from the kind of registration bills which have been proposed year after year, and without in any way putting all architects on the same æsthetic level, or pretending to do so. Those who care about a building being carried out as a work of art would select architects in whom they had confidence just as they do now; but if they selected them from the ranks of the Institute they would, after allowing time for the Institute system to produce its practical results, know that they could at least also be sure of finding there a man who could be trusted with the practical side of building.

The more important question is, however, whether this view of the architect as an artist on the same plane with the painter and sculptor is not really a mistaken one; whether it is not claiming too much on one side and giving up too much on the other. As far as architecture is an art, it is at all events not a plastic art like sculpture and painting, nor can it be carried out by the personal hand of the artist as a picture or a statue can. To say that the architect ought to be a man who builds with his own hands, as we have heard lately, is absurd on the face of it, seeing that however much he had the capability to act, himself, as a practical builder, one man cannot execute a building as one man executes a statue, for the simple reason that the work is too big for one man's labour. Division of labour, and labourers under the direction of one head, must come, for anything larger than the smallest cottage; and then where is the position of analogy between architect and painter?

The danger is that when architects desire to take their stand as artists above everything else, and on the same ground with other artists, they will come to regard their function as simply that of giving an expressive and decorative treatment to a building, and that while dwelling on this side of the work they will "neglect the weightier matters of the law," and forget that, in the sense in which architecture is an art, it is the whole art of planning and constructing a

building for the best fitness for its purpose, practical and æsthetic, and that the practical and æsthetic are inextricably bound up together from the very beginning. A great deal of what is part of the real art of architecture has nothing to do with the art of design as understood by other artists, and is what they often neither comprehend nor sympathise with. And an architect who is mainly considering architecture from the point of view of design in a painter's sense of the word is very apt to become, in real truth, a dilettante rather than an architect. In fact we actually see the process going on. We see architects who occupy their minds a great deal with the style and artistic effect of their buildings, but who are entirely deficient in the power of planning, and who do not properly look after the drainage, ventilation, or even foundation of their buildings. We see a case mentioned in the daily papers only this week, of a monument designed by an artistic draughtsman, which is already in danger of collapsing from the imperfection of the foundation, which the architect (or "designer") evidently had not seen to properly. This is a typical instance of a good deal that is going on among the ranks of "artistic" architects. We call such a man a dilettante architect, not a real one. He is playing on the surface of the subject, and neglecting its severe practical and scientific basis, and thereby actually giving up a great deal of what makes the real dignity as well as the real interest of architecture. There is no better summary of the subject of architecture, no better architectural "bible," if we may so call it, than is comprised in Gwilt. Take the immense range of knowledge on various subjects which is outlined there as included in the province of the architect, and say if it is not a study any man might be proud to be master of (if he could), and if there is not something far more dignified, far more worthy of serious attention, in the scope of the art of architecture as there set forth, as an art based on severe geometric and practical studies, than in the mere production of picturesque buildings. The one, to our mind, is architecture, the other is dilettantism.

NOTES ON PRE-CONQUEST ARCHITECTURE IN ENGLAND.

By PROFESSOR BALDWIN BROWN.

VI.—*Celtic Influence.*

A PASSING notice has already been given to the square ends of Saxon churches, and to the theory that would explain these from sources outside the sphere of Roman influence. It may, however, be asked at the outset, why should we give prominence to the fact that a few apparently early Saxon churches possess this feature? They are mostly of a village type, and as the square end is undoubtedly simpler than the apse, it may well be urged that its use is due to considerations of cheapness or to want of skill in the builders, rather than to any hidden or far-reaching influence. The answer to this is that the significance of the feature in question only emerges when it is looked at in the light of subsequent facts in our architectural history. The real starting-point is the pronounced decision in favour of square as against apsidal choirs, arrived at by our post-Conquest builders. If we take twenty-four greater Norman churches that held, or now hold, cathedral rank, we find that nearly three-fourths of them were planned by their original builders to end apsidally, while so greatly did the fashion change that in their present condition (leaving out St. Paul's) there are only four of the number—Canterbury, Norwich, Gloucester, and Peterborough—that show the circular termination, nor would it be easy to name any later English Mediæval churches of similar rank, except Westminster Abbey, that were built with apsidal choirs. In respect to what Professor Freeman called "the strange insular tradition of the flat end," our churches form a group apart from those of the rest of Europe in that their peculiarity is national and not due to the influence of any special religious rule or set of ideas. In the churches of reformed monastic communities throughout Europe we find the apse frequently abandoned in favour of the more simple and unassuming square end. The Cistercians did this most markedly, but the same result followed in many cases from the older Cluniac reform, as well as the later movement of the Preaching Orders. In England, however, the Episcopal churches served by secular canons, as well as the old Benedictine houses, were quite as ready as the offshoots of Citeaux to surrender the Roman feature of the rounded choir.

For this noteworthy characteristic of English architecture there must exist a reason, and this cannot be the most obvious one of cheapness, for the practical abandonment of the apse took place at a time when great architectural undertakings were in the air, and wealth was poured out lavishly for new fabrics and their adornment. Carl Schnaase, who is still the master of all those who work at the history of the arts, devotes one of his philosophical pages to suggestions for an explanation, and mentions the possible influence of pre-Conquest tradition. This hypothesis of an old national prejudice in favour of the rectangular choir, which reacted against the imported fashion of the apse and ultimately triumphed, lends a significance to the form of our earliest churches that it would not otherwise have possessed. Such a tradition existed in parts at any rate of Britain, and our national history lets us see how it could have been brought to bear at an early date upon the country at large. The tradition in question originates in the Irish or Celtic square-ended stone oratory, which was the outcome of habits of building in masonry indigenous in certain Celtic lands, and at first quite independent of all Classical influence. It is true that of the existence of such a Celtic stone style we are not informed by our authorities, for Bede contrasts in matters of building the *mos Scottorum* with the *mos Romanorum*, and seems to understand by the former building in wood, by the latter construction in stone. When he uses the expression *more Scottorum non de lapide* about the original church erected by the missionaries from Iona on Lindisfarne, it is clear that Bede and his associates understood wood to be the native style of building of the Celts of Scotland and Ireland. Yet, on the other hand, there is convincing monumental evidence that the Celts both of Ireland and Scotland were well practised in stone building, and had erected churches of masonry from a very early period. In any monumental history of Ireland, the chapter that describes the gigantic works of defence of a period to all appearance pagan will be followed at once by one recording the erection, in the same technique, of oratories and monkish cells of the earliest Christian missionaries. There is no doubt as to the Christian character and the early date of a large number of Irish stone buildings, and these can be sufficiently matched by Scottish examples to show that the Scots on both sides of the Irish Sea knew perfectly well how to erect stone churches after their own native pattern. This monumental evidence is so clear, that we can only explain the expressions of Bede on the supposition that he was treating in a somewhat summary fashion a subject in which he was not specially interested. We may take the expression *mos Romanorum* to imply, not only the mere use of stone as a material, but the employment of Classical features, such as squared ashlar, the arch, and lime-mortar and plastering; while *mos Scottorum* points to the fact that, on the whole, wooden buildings were far more common among the Celts than stone.

Admitting, however, that whether exceptionally, or by a less prevalent *mos*, the Scots built in stone as well as in the less durable material, we have still to ask (1) whether there is any probability that the Celtic tradition of stone building affected the form and technique of our primitive English churches, and (2) whether, if this be the case, the fact has any bearing on the later preponderance of the square end in English churches. Those who reject the hypothesis of Celtic influence may point to the fact that when the Hiberno-Scottish missioners settled in their abode at Lindisfarne, the first church they erected there was not of stone, but of wood. If this appears very unlike the introduction of a native Irish or Celtic stone style, we may turn for further instruction to a curious passage in Bede's prose life of Cuthbert. This saint was a Northumbrian and a Romaniser, but he had evidently imbibed from the Scots certain of their characteristic habits in the ascetic life, as well as an insane terror of the female sex. Bede tells us (chapter 30) how he constructed for himself on one of the Farne islets a place of retirement comprised within a high ring-wall, and containing an oratory and a dwelling-hut. The wall was not of cut ashlar or brick and "cæmentum," but of unwrought stones, some of which were of large size. Bede takes it that the ring-wall was intended to keep his eyes and thoughts from dwelling on the outer world, but the truth is that what he constructed was simply an Irish, so-called, "Cashel," a wall of fortification round the huts and oratories of an early monastic settlement. The work was of thoroughly Celtic type, useless on a wave-girt islet off the friendly Northumbrian coast, and clearly an instance of a traditional form of construction imported by the immigrant priests.

If Cuthbert thus conformed to the habits of the Celts, whom in ecclesiastical matters he opposed, it is highly probable that the Scottish missioners themselves would carry on their native methods in the construction of the various churches which Bede tells us they erected in different places soon after their arrival (*Hist. Eccl.*, III., 3). Cedd at Lastingham set up a characteristically Celtic establishment, consecrating the spot by a curious rite of incubation (*ibid.*, III., 23), and though the church he himself erected there seems to have been of wood, yet a stone one soon superseded it, and would be almost certainly of Celtic form. We are not told what was the fashion of that "*monasteriolum permodicum*," which a Scottish missioner had built at Bosham, in Sussex, before ever a Wilfrid had brought to the spot the light of Romanised Christianity. Of the original church at Malmsbury, erected by the "*Scottus*" Meildulf before Aldhelm's time, William of Malmsbury tells us that it was "a very small basilica," and had lasted almost to his own days. Had it not been of stone he would almost certainly have mentioned the fact. On the whole, we may safely say that there is no reason why the Celtic missionaries, who penetrated to almost every part of the land save into the Roman preserve of Kent, should not have carried with them the characteristic features of their own native stone style.

Passing from these questions of *à priori* likelihood to the Saxon buildings themselves, we may ask, What is there about them that is specially Celtic? Too much must not be made of the general plan, for if the oblong, single-aisled interior with rectangular chancel is a Celtic type, it is too common at other periods, both in England and on the Continent, for its appearance in early Saxon days to be specially significant. The varying proportions of the parts that compose this type of church are, however, worth attending to. The ratio of width to length varies remarkably. In the three apparently earliest churches in the North, Escomb, Monkwearmouth, and the now-destroyed Jarrow, it is, in feet, about 14½ to 43½, 19 to 66, and 18 to nearly 80 respectively; while in the probably late Wittering and Corhampton, and the dated chapel at Deerhurst of about 1056,

Fig. 36.—Window, north of Nave, Escomb.

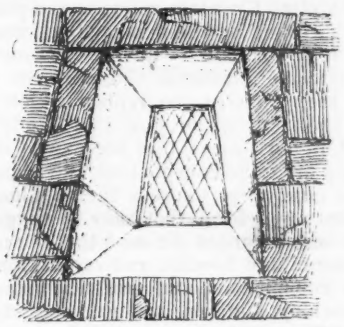


Fig. 37.—Window, south of Nave, Escomb.

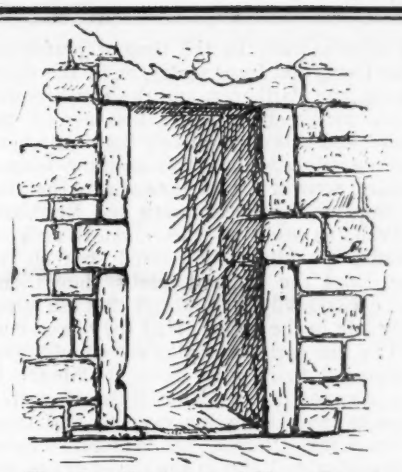


Fig. 38.—North door of Nave, Escomb.
Widt'h—3 ft. 3 in. below, 3 ft. above.

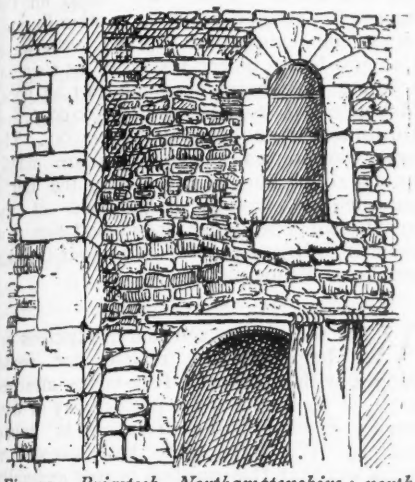


Fig. 39.—Brigstock, Northamptonshire; north face of tower, and north-west quoin of nave.

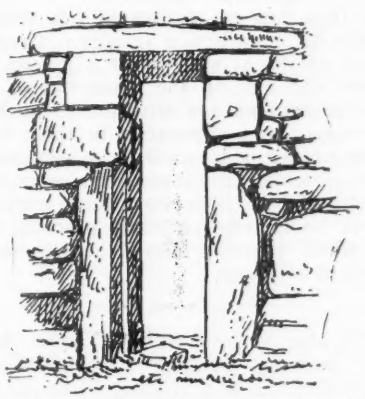


Fig. 40.—Doorway in the Church of the Canons, Aran, Ireland.

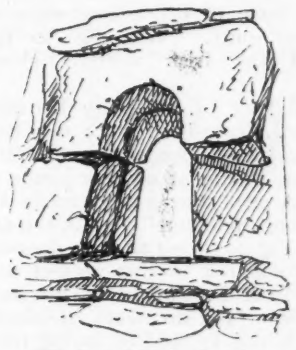


Fig. 41.—Window, Kill Enda, Aran, Ireland.

it stands at 17 to 31, 18½ to 36, and 16 to 25½; or, in other words, while in the first group the length is three to four times the width, in the other three it is not as much as twice. We may have here a useful criterion of relative dates, but hardly a sign of Celtic tradition, as the old Irish and Scottish oratories are not particularly elongated. The chancel arches have in the above examples, so far as they have been preserved, the same relative widths, while at Bradford-on-Avon, where the nave is in its proportions intermediate between the above two groups, the chancel-arch is almost as narrow (3 ft. 4 in.) as the external doorways. Now a narrow chancel opening after the pattern of a doorway is certainly a characteristic of early Celtic churches in Scotland, if not in Ireland, and may be claimed as evidence in favour of the Celtic influence we are discussing.

Passing from plan to elevation, we note two characteristics in the Saxon churches of earliest type, the great height of the walls and the steepness of the gables. In old Jarrow Church, according to Hutchinson's "History of Durham," the former was nearly 30 ft. on a width of 18 ft., and at Monkwearmouth the measurements are about the same, while at Bradford-on-Avon a nave only 13 ft. wide has walls of the height of 25 ft. The steepness of the gable of Monkwearmouth has already been noticed (p. 250, *ante*). These features, however, though apparently early, are pretty constant through the Saxon period. The chancel of Repton (p. 217, *ante*) is built over a columned crypt of Mediæval, not Early Christian, type, and has curiously lofty walls, while the same characteristic is noted at the probably late Wittering. The cruciform Norton, again, shows the marks of very steep gables on the four faces of its Saxon tower. In seeking an explanation of these features, we must take into account the pertinent fact that the towers, which cannot be very early, exhibit the same tendency to height and slenderness as the fabrics themselves. Is this tendency a matter of Celtic tradition?

Some help towards an answer to this question may be derived from a comparison with some early churches in north-western France, which would probably be the portion of "Gallia" most in touch with England in early Saxon times. Besides the "*Basse Œuvre*" and other primitive examples in Picardy, there is a group near Tours, some of which MM. Bourassé and Chevalier ("Eglises Romanes en Touraine du VI^e^ au XI^e^ Siècle) would identify with buildings mentioned by Gregory of Tours, at the end of the sixth century. This may be somewhat rash, but we need not doubt that the style of some of them carries us back to a time corresponding to the date of our early Saxon churches. We have already seen (p. 370, *ante*) that the technique of their masonry is Roman, and quite different from that of our native examples, but in the matter of proportions there is this point of interest, that, while they are not distinguished by special length and narrowness, yet some of them are remarkable for a great proportionate elevation of the walls, though, on the other hand, the pitch of the gables is low. On this last point the authors just quoted remark:—"*La toiture originale était toujours surbaissée comme dans les édifices Italiens*," and the present writer's observation, so far as it has gone, bears out what they say. Now it is possible to find an explanation of the lofty walls which will apply to "primitive Romanesque" buildings in north-western Europe generally. The whole of this region suffered greatly from Viking inroads, and it may well have been with a view to protection that the walls of the stone churches were reared to this abnormal elevation. It was an obvious advantage to lift the window-sills and the roof as high as possible above the range of the firebrands, and as this characteristic of height is the only non-Classical feature about this group of Touraine churches, some special cause of this kind must have been in operation. It may be argued that, if this explanation is correct, the lofty Saxon churches would not be earlier than the Danish invasions of England in the ninth century. The need for a certain element of fortification about a church may, however, have been felt earlier, and it is not to be forgotten that the primitive monastic settlements of the Irish were commonly in a fortified enclosure or "cashel."

The steep slope of the gable is, on the other hand, a characteristic of the Irish oratories. Miss Stokes speaks of a "singularly steep roof" as belonging to the typical Irish church ("Early Christian Art in Ireland," II., p. 79). Is it too far-fetched to suggest an origin for this in the native construction of stone roofs by the process of encorbelment, before the Classical vault was understood? Such roofs (as was noticed incidentally not long ago by Mr. H. H. Statham in a note to his book on "Architecture for the Public") are necessarily steep, as the successive layers of stones must be laid so as only to project slightly beyond the line of those below. The tradition of these pseudo-vaults may have been operative in this country, though Saxon churches were actually covered with roofs of wood, which are all the comparatively slight walls would have borne.

In technique and details the early Saxon churches have certain marked characteristics in common with the Irish monuments. The irregular, imperfectly-squared stonework occurs in both, but we cannot, perhaps, say more about this than that the work in both cases is non-Classical. The Saxon quoining is not apparently, derived from this source, though in their "megalithic" character the big stone quoins remind us a little of early Irish masonry. The resemblance in certain door and window openings is, however, too striking to be a case of coincidence, and is the point of special weight on the side of those who postulate the Celtic influence now under discussion. Figs. 36 to 38 show three openings from Escomb—two windows and the north doorway of the nave. Two have square lintels, and the third a round head cut out of two single stones, one behind the other, that on the inner face of the wall being 7 ft. long. The windows have an internal splay, and the jambs of all three openings are inclined. With the inclined jambs may be taken the feature of a slight batter in the main walls of the building as they rise, observable at Escomb and some other Saxon examples. These last features are certainly non-Roman, though they occur in other phases of Classical art, and they are just as markedly characteristic of the primitive stone architecture of Ireland. M. Perrot, in the latest volume of his "Histoire de l'Art dans l'Antiquité" ("Grèce Primitive," p. 506), gives an ingenious but somewhat far-fetched explanation of the sloping jamb, but it is sufficient to understand it as due to the wish to save material in the flat lintel, the length of which may in this way be reduced. It occurs in early Greek stone architecture, as in the doorway of the "Treasury of Atreus,"

and survives even in the time of perfection of the Doric and Ionic styles, as in the doorways of the Parthenon and the Erechtheum. Roman architecture makes less use of the feature, and it is very unlikely that it can have been introduced into this country from a Classical source. It is noteworthy that the openings at Monkwearmouth and Bradford-on-Avon, as well as the chancel arch at Escomb, are all straight-sided; but on the other hand the inclined jambs show themselve occasionally in buildings that are apparently late in the style. Had they been confined to the early examples we should have pronounced them with more confidence to be a sign of direct Celtic influence; it is somewhat surprising, however, to find them at Deerhurst Church, in Warden Tower, Northumberland, and in the tower of the fine example of Saxon stonework at Brigstock, in Rockingham Forest, Northamptonshire (fig. 39), none of which bear signs of any special antiquity. With fig. 36 may be compared the Irish window shown in fig. 41.

A final trait of similarity between old Saxon and Scoto-Irish work may be found in the occasional appearance in the latter of the special treatment of door-jambs, which, as we have seen, seems to precede the so-called "long-and-short" work in the external quoins. Fig. 40 shows an Irish doorway that may be compared in this respect with the example from Escomb in fig. 38, and with the jambs of the archways at Monkwearmouth. If this method of laying flat slabs upon upright occurred in the more rudely formed Saxon openings, it would be natural to suggest for it an Irish source. As a fact, however, the Escomb chancel arch, where it is very marked, as well as the Wearmouth doors are so careful and precise in their workmanship that they must either be Roman or inspired by Roman craftsmanship. Hence the balance of evidence would seem at present to incline towards a Classical origin for this particular form of stonework.

NOTES.

AT a meeting at the Society of Arts on Wednesday Professor Roberts-Austen read a paper on "Mural Painting," partly suggested by a recent correspondence in the *Times*, and recommending the system in which a soluble silicate is used as a vehicle, in place of the true fresco, with which such difficulties have been experienced in this climate. The lecture referred especially to the decorative paintings in the small church at Wonersh, designed by Mr. Harrison Townsend, and decorated with paintings in the silicate process by Mrs. Anna Lea Merritt. Illustrations of the paintings were afterwards shown by the lantern. An interesting portion of the lecture consisted also in the illustration, by means of the lantern, of the actual construction, as it may be called, of the materials of the fresco as seen under the microscope. Mr. Holman Hunt, who occupied the chair, spoke strongly afterwards of the importance of finding a method which would allow of the successful prosecution of mural painting, without which we could hardly have grand art in England. By mural painting Mr. Hunt no doubt means painting actually *on* the walls; a point of some importance. The adoption in France of the easier system of painting on canvas which is subsequently affixed to the walls has led to a great deal of easel-painting, even what may be called *genre*-painting on a great scale, being substituted for the more severe style proper to true mural painting.

THE Board of Trade has just published a circular, in the form of a Parliamentary Blue-book, on the subject of the inconvenience caused to the travelling public by the ineffective manner in which station names are indicated on railway-stations. The circular, which is addressed to the railway companies of the United Kingdom, refers to the practice of so surrounding the names of the stations with highly-coloured advertisements that they become obscured, and are with difficulty seen; but in the replies which have been received by the Board of Trade it is stated, in most cases, that the names of the stations are quite conspicuous, and a number of the companies express their willingness to adopt any reform that may be suggested. In fairness it cannot be said that the names of some of the London railway-stations are at all conspicuous, and until the names of approaching stations are automatically indicated in each compartment of every train, a clear space of several yards should be left around the name-board at a station, and the letters of the name should be very much larger than they are at present. A constant traveller on a particular railway can readily tell the names of stations at a glance and without the aid of the name-board, but casual passengers are often put to much inconvenience and annoyance in their futile efforts to discover, amid a wilderness of advertisements, the inconspicuous station name; and in the interests of those travellers it is to be hoped that some practical suggestion will speedily follow the circular of the Board of Trade.

THE case of the Fareham Electric Light Company *v.* The Fareham Urban District Council is a striking illustration of the folly and meanness by which local bodies are sometimes actuated. A contract had been made by the Fareham Local Board, whose duties were taken over by the Urban District Council, with the Electric Light Company, for the purchase of their undertaking. The new body repudiated the contract, and the action followed. All sorts of defences were raised, which were practically abandoned at the trial, which then came simply to an assessment of damages for the breach of the contract. The jury awarded £3,800 damages. It was absolutely clear that the District Council were bound by their predecessors' contract, and yet they saddled the ratepayers with the cost of a law-suit, and exposed their own want of business capacity. If local bodies could thus repudiate contracts made before the members for the time being are in office, it would put an end to all contracts with them. The present case will remind these smaller public bodies of their obligations, and it is to be hoped be'a warning to them to act honourably and according to the law.

SINCE the equestrian statue has become so much vulgarised as a type of monument throughout Germany, several communities have adopted memorials in the form of a tower erected on a conspicuous position. One of these towers has been lately completed on the battlefield of Gravelotte, the necessary funds having been raised voluntarily by the citizens of Metz. The tower is 100 ft. high, and has cost about 1,500*l.*, Herr C. Wahn acting as architect. Its unpretentious design is very effective, and its outline excellent when seen from a distance against the sky. Architectural memorials of this kind are at all events an improvement on the cheap and bad sculptural work in which the smaller German communities have been indulging since the death of the Emperor William I. and on the occasion of the late anniversary of the Franco-German War.

SOME extensive warehouses and wharfs are to be erected on the River Spree at Berlin, above and below the city in the east and west suburbs. These works will be partly a Municipal institution, partly a Government institution, and partly a commercial concern, as the City of Berlin is to provide the sites and build the wharfs, the Government to supply the railway plant and make the connexions with the State railways, whilst the warehouses and sheds are to be built at the expense of the subscribers interested, who will also have the responsibility of maintenance. The revenues will go to the subscribers to cover the cost of maintenance, and perhaps give an interest on the capital invested. The Chamber of Commerce proposes to represent the subscribers and act for them, and it is due to the efforts of this body that the matter has been put before the authorities. The total expenditure is to be about 500,000*l.*, of which 150,000*l.* will be required for the ground and 100,000*l.* for the principal blocks. Herr Schwabe is the author of the designs, and has prepared the estimates. These are based on the figures for similar schemes in other German cities on important inland waterways. Cologne has required 600,000*l.* for a similar scheme, Mannheim as much as 1,200,000*l.*, Mayence 400,000*l.*, Dusseldorf 500,000*l.*, and Dortmund is to have about 200,000*l.* The new warehouses and wharves are chiefly intended for the wheat traffic, the Berlin corn-dealers having complained of the insufficient warehouse accommodation, and their inability to provide it without Government and Municipal assistance.

WE are glad to see that electricians are beginning to realise that wood-casing, with numerous fuse-boxes attached to it, is by no means a perfect way of conveying electric wires to lamps in house-wiring. We have often had occasion to point out that this method is very unsightly. There are many hotels and other buildings which have been wired without the slightest attempt at preserving appearances, as if getting at the place where the lamp is to be fixed by the shortest route over moulding and cornice was the main consideration. Hence, what one of the papers read before the Institution of Electrical Engineers last week calls a glaring display of wood-casing and ugly crockery-ware. Anyone wanting good examples of this has only to see how numerous London shops are wired. Again, where the wood-casing is concealed there is often a reckless cutting at joists by the so-called wiremen to the possible weakening of the building. To guard against this, architects should always, when drawing plans for specifications, if there is any probability of the electric light being adopted, make ample provision in the way of conduits or channels for the electric light or power wires. These wireways would render the concealed wires always accessible, and also render harmless the rough and ready methods of detecting faults adopted by some wiremen. It would be a great boon to fire insurance inspectors, as at present any inspection of electric wiring after it has been closed in by lath and plaster is of no value. It would also do away with the methods of scamping work adopted by incompetent wiremen, illustrations of which from time to time appear in the electrical papers. Of course, when the lighting of a building is by both gas and electricity, the same conduit must not be used for both the gas-pipes and the wires. Now that high voltage is getting so common this is especially important, as even with the ordinary 100-volt supply on the three-wire system, the pressure between one of the wires and an adjacent gas-pipe is often nearly 200 volts. Many accidents, some of which have been serious, have arisen from this cause. When there is a 200-volt supply it is impossible to be too careful in keeping the gas and water-pipes well away from the electric wires and lamps.

WITH reference to our "Note," pp. 391-2, *ante*, upon the "overhead work" of the electrical tramway between Coventry and Bedworth, we may mention that the London United Tramways, Limited, intend to apply to the Board of Trade for a provisional order which shall authorise that company, with the London County Council's consent, "to place and maintain in or over the surface of any street, road, or place ....

such posts, brackets, and wires as may be necessary or convenient for working the tramways of the company constructed or authorised . . . . by electrical or other mechanical power"; and to render inapplicable to the company's undertaking the London Overhead Wires Act of 1891, and by-laws made in pursuance of that Act. It is to be feared that, unless decided steps are taken to oppose the overhead system, it will become a very serious nuisance and injury to the effect of streets and suburban roads.

THE Winter Exhibition of the Society of Painters in Water-colours is noticeable among other points for containing a rather unusual number of works dealing with architectural subjects. Among them Mr. Albert Goodwin's two beautiful views of the Taj Mahal may be first mentioned (147, 158), showing the building under two quite different aspects of light and colour. Mr. Goodwin also sends a very fine drawing of "Oxford" (214) as seen from the roof of the Radcliff Library, a fine drawing of Wells Cathedral (188), and a view of Whitby. Mr. T. M. Rooke exhibits a series of architectural sketches and studies in France. Mr. Abbey has a study of a Mediæval castle (3), and a large sketch of an interior of "a German Church" (279). Mrs. Allingham's charming study of a row of high roofed red-brick cottages in Kent (182) may come under the same denomination, and there are other architectural subjects of more or less interest. Among the landscapes is an especially fine one by Mr. Phillip, "Pass of the Enterkin" (201). Mr. Hopkins's two studies of sea beating over rocks (246 and 263) are exceptionally successful. One of the most beautiful things in the collection is a portrait study of a head by Sir E. Burne-Jones (280). Miss Rose Barton sends, in "Old Chelsea Church" (190), an admirable study of street scenery. Mr. Wilmot Pilsbury's "Village Green" (258), though not belonging to the best and broadest school of water-colour, is a perfect piece of work in its way. Among other works worth special notice are Mrs. Allingham's "The Cuckoo" (30), with the foreground a mass of bluebells; Mr. Waterlow's "Return of the Flock" (66), Mr. R. W. Allan's "Cromarty" (106), Mr. Charles Gregory's "On the South Cliff, Rye" (154), and Mr. G. A. Fripp's "Moulsford Ferry" (176).

THE exhibition of sketches by Mr. Peppercorn, at Goupil's Gallery, was in one sense a little disappointing, as Mr. Peppercorn has been known as an artist devoting himself a good deal to the study of special effects of light and atmosphere, and this collection consisted mainly of sketches in a broad and free style, but presenting no special characteristics. It contained, however, a considerable amount of good work in true and pure water-colour style.

THE Municipality of Berlin advertises for a city architect, in the place of Stadt Baurath Blankenstein, who retires from office. The salary will be 600*l.* (*sic*), as in the case of the new director of the Municipal Gas Works, and we wonder what candidates will offer their services for this pittance. The work at Berlin is exceptionally onerous, as the scope of the architect's department is too large. Under Herr Blankenstein the architectural rendering of the municipal works was of a very low standard, though many of the buildings showed excellent planning, especially the new market halls and hospitals. We trust that the new official will use his influence to improve the appearance of the municipal buildings, though we cannot expect a high standard of design at 600*l.* per annum. At present a municipal work can always be recognised in Berlin by its uniform ugliness, and it is time that this should cease. Government work has been improving rapidly.

LETTER FROM PARIS.

WE have already given the result of the competition for the rebuilding of the Cour des Comptes, the blackened walls of which will now at last disappear, having remained where they are since the war of 1871. Mr. Moyaux, the Inspecteur-general des Bâtiments Civils, is the architect who is to carry out the work; and his scheme is the one which corresponds best with the instructions, and which, by its simplicity, shows most respect to the original monument. He has confined himself as far as possible to the simple rebuilding of the original architecture, and has retained the old façades without modification, only modifying the interior plan so as to accord better with modern requirements.

The construction of the Rue Reaumur has rendered possible the complete disengagement of the Conservatoire des Arts et Métiers. At this point we come on a historic monument of the greatest value, the Chapel of the ancient priory of St. Martin-des-Champs, with the priory tower. The architectural interest of this chapel is well known to many of our readers. The apse is at present shut in by old and ugly houses, which are to be shortly demolished. There will be no need, however, of any danger to the chapel, except from its own at present very dilapidated condition, which requires immediate care. It is considered that it will be advisable in any case to restore the tower to its original height, and then utilise it as an annexe to the Conservatoire des Arts et Métiers. Much is expected—if we can get a sufficient vote from the Government—from the new architect in charge of the Conservatoire, M. Gerhardt, who has succeeded to M. Ancelet, and who is already engaged in making important modifications in the general arrangement of the Conservatoire and its collections, which are at present in an exceedingly crowded condition.

The work of reconstruction at the Sorbonne is advancing rapidly. The whole of the new buildings along Rue St. Jacques and Rue de la Sorbonne are completed. To right and left of the chapel are two large arched bays which serve as a kind of transition link between the style of the church itself and that of the other façades. One of these leads to the Ecole Nationale des Chartes; the other to the Faculté des Sciences. The interior decoration is going on at the same time, the painters taking their turn now, and not the sculptors, as the Paris press has erroneously stated; the sculptors have done a good deal of their part already. A large work by M. Montenard, "La Méditerranée," is now being fixed in the Amphithéâtre de Mineralogie, and a picture by M. Gervex "L'Orage," will shortly be fixed in the Amphithéâtre de Physique. M. Besnard is at work on a large symbolical composition, under the title, "De la Mort renaît la Vie"; M. Aimé Morot is engaged in the decoration of the anatomical lecture-room; and M. Carrière is to occupy himself with the lecture-room of "Enseignment Libre." M. Dagnan-Bouveret is to decorate the small Amphitheâtre des Lettres, M. Leon Glaize that of "Les Chartes," and M. Lhermitte will undertake the Salle des Faculties, the Dean's Gallery, and the large room of the library. There are still sixteen more statues to be commissioned before the completion of the works. With the splendid decoration of M. Puvis de Chavannes, and the other works by some of the first painters of the day, the Sorbonne will be rather an exceptional building in regard to its decorations.

The appointment of M. Doumer as Minister of Finance is to be signalled by a reform in the French coinage. M. Roger Marx, Inspector-General of Museums and one of our best art-critics, has revived the subject and drawn up the programme. The Third French Republic, it must be remembered, has hitherto had no distinct coinage; the effigies on our silver and copper coins are old ones of little merit, dating from either 1792 or 1848; their symbolism is often incomprehensible and out of date. The anachronism seems the more unpardonable seeing that the art of medal-engraving never stood higher than in France at present, so much so that foreign nations are sending to our engravers for their coinage. The proposition of M. Marx has received the general support of the Press and of the Minister of Finance, who is himself an amateur in numismatics. The artists selected to design the new coinage are M. Chaplain for the gold pieces, M. Roty for the silver, and M. Daniel Dupuis for the copper. It will be a year, however, before the new coinage can be put into circulation.

The appointments of M. Chaplain and M. Roty in the above capacity will satisfy everyone, but the appointment, by the Minister of Fine Arts, of M. Chaplain to be director of the Sèvres manufactory is rather open to criticism. The late director, M. Coutan, the sculptor, has just retired mainly because he recognised that his directorship was rather an empty name, as he had never studied ceramic work at all; and it is certain that M. Chaplain, though a splendid artist in his own class of work, is also quite unacquainted with ceramics, and knows nothing about the chemical and practical processes in connexion with the art. Some such artist as M. Bracquemond, M. Lachenal, or M. Delaherche, would have been better fitted for the position, and would have more claim to it.

The question of the three proposed lines of railway to facilitate transport in Paris is now before the Municipal Council, and if they accept the proposals, which we have already described, there will be a good beginning of the Paris Metropolitan railway system. The Minister of Commerce and Finance, at the same time, are laying before Parliament the "projet de loi" relative to the Exhibition of 1900. Nothing is altered as far as concerns the sites proposed by the General Committee, which we have already indicated. One of the special departments of the Exhibition, the Retrospective Exhibition, in place of being concentrated, as in 1889, will be divided among the various groups and classes, which will each have, as a vestibule, a kind of little museum exhibiting the progress made in that branch of work from the year 1800 to the end of the present century. In regard to exhibitors, the interior regulations will be as nearly as possible the same as in 1889, and the price of entry for the public has been fixed at one franc, as in the previous Exhibition.

The Carnavalet Museum has received an interesting collection of eight paintings, views of old Paris, executed by a distinguished architect, M. Hoffbaüer, and forming some years ago a portion of the diorama of "Paris à Travers les Ages" at the Champs Elysées. These paintings are of real value both in an artistic and documentary sense. They have been presented to the City of Paris by M. Ambroise Firmin Didot, the well-known publisher. They represent:—

1. "Lutèce vers 460," a view in the valley of the Bievre.
2. The Hôtel de Ville and the Place de Grêve in 1575.
3. The Louvre and its environs in 1572.
4. The Château of the Tuileries and its surroundings in 1594, at the moment of the entry of Henri IV.
5. The Hotel and the Tour de Nesle in 1543.
6. General View of Paris in the Sixteenth Century ("Journée des Barricades" in 1588).
7. The Cemetery of the Innocents in 1610 (Arrest of Ravaillac).
8. The Palais de Justice and the Pont au Change in 1621.

The pictures have been installed, in their dioramic form, in the Hôtel de St. Fargeau, which has been acquired for the enlargement of the Carnavalet Museum.

The Académie des Beaux-Arts is proceeding to the election of a certain number of Honorary Corresponding Members, among whom we are glad to see that Mr. Orchardson, R.A., is nominated, to fill the place of the late M. Chenavard, of Lyons.

We have already referred to the death of M. Aldrophe, the architect, who has had a well-filled and successful career. He was born in 1834, and studied architecture under Bellange at the Ecole des Beaux-Arts. While still a young man he entered the service of the Paris Municipality, in 1855, under the orders of M. Balthard. In 1871 he became architecte-en-chef, and from that time filled an important position both as architect and official. His Jewish Synagogue in the Rue de la Victoire is a remarkable architectural conception, indicating talent of the first order. Besides his official work, he also carried out a number of special buildings, notably the hotel of Baron Rothschild, on Avenue Marigny, and the same owner's splendid château near Chantilly; the Hôtel Thiers in Place St. George, the Jewish Seminary in Rue Vauquelin, and the celebrated tomb of Thiers in Père Lachaise. He had been since 1881 a member of the Société Centrale, and in that year received the medal for "Architecture Privée."

The death is also announced of an artist of talent, Pierre Charles Comte, who had some celebrity at one time, though he has been forgotten by the present generation. He was a painter of historical pictures of the time of the sixteenth century, which had considerable success. He was seventy-two years old at the time of his death; he had for some time ceased to exhibit and lived in retirement at Fontainebleau.

Country House at Bar Harbour, Maine, U.S.A.

COUNTRY HOUSE AT BAR HARBOUR, MAINE.

THE sketch shows one of the class of small country houses to which Mr. Emerson and other American architects have imparted a certain character which may be recognised as specially American, though it is not perhaps easy to define in what it consists.

NOTES ON SOME RECENT RESTORATIONS IN BELGIUM:

BRUGES AND MECHLIN.

THE restorer—at least the church-restorer—does not seem to have been quite so busy during the last decade as in that preceding it. This is, on the whole, a matter for congratulation. Good results have been achieved, no doubt, in cases; nevertheless in Belgium no more than in England has restoration learned its limits; and still less has it perfected its technique over its much more various field.

Frenchmen express the sporting tastes of Englishmen by the sentiment they are pleased to put into our mouths:—"It is a fine day; let us kill something." There are evidences of a feeling among both the public and the profession in Belgium, which might be somewhat similarly expressed:—"This is a fine building; let us destroy something." The idea is on the wane, perhaps, but clearly it is not extinct, It is prompted, of course, by the plausible notion of reviving the original conditions of the fabric—as if an imitation could ever be as an original, even did a perfect record of the latter exist to work upon. In point of fact, these restorations have of necessity been largely conjectural, often injurious to the original structure, while fraught with losses of intermediate work. It is difficult to put oneself in the unhistoric and inartistic frame of mind which cheerfully effaces the hand-mark of generations from the buildings of the land, and substitutes for the genuine art of the last centuries the dubious "revivals" of our own.

Among the features thus sacrificed in Belgian churches—and notably in those of Bruges—are numerous altar-pieces of Renaissance character, florid, no doubt, and heavy, and strictly speaking, incongruous, but still rather grand and monumental, and eminently characteristic of the country. They have made way for works stylistically "correct," sometimes even of considerable merit, but generally small in scale, tame in treatment, and finicking in detail. The same want of vigour and originality stamps, for the most part, other accessories of recent introduction, while colour decoration is gay rather than rich in effect. Belgian churches are commonly so large (being, moreover, fully equipped to start with) that renovation seldom extends over the whole; but here a side-chancel, there a chapel is treated, a single altar replaced, or piece of furniture introduced. Hence arises a patchiness of effect and a loss of general harmony almost inevitable under the circumstances. For the sake of contrast, let me mention a building which appears, so far as the interior is concerned, to have been pretty well let alone. This is the noble church of Notre Dame at Mechlin. It is not that it contains, like some Belgian churches, treasures of high art or antiquity; but such fittings as it has possess genuine character combined with a certain historic interest, and blend with one another and with the fabric itself in a pictorial, as distinct from a stylistic, unity. The great and simple proportions of the building, the pavement inlaid with vast sepulchral slabs in high relief, the old Renaissance marbles and woodwork, the reposeful air and slightly forlorn grandeur of the whole, are most impressive, the very absence of obtrusive modern care only enhancing the sense of bygone pieties more robust than our own. Widely different in date as are the fittings from the fabric, they are undoubtedly more in keeping with it than would be the professed Mediævalism of the modern ecclesiastical furniture-shop.

Among works actually in progress in Bruges at the time of my visit, was a perilously thorough renovation of St. Jacques' north choir-aisle, which, unroofed and unglazed, looked as though it had suffered conflagration. The intention probably is to cover it with a waggon-head ceiling such as has already been placed—and with excellent effect—over portion of the church; nevertheless, the question arises whether an original roof of, say, the seventeenth or eighteenth century is not preferable to an imitative roof of the nineteenth. The desirableness of fitting the elegant window-openings with tracery is less open to doubt, though there would seem to be nothing but conjecture to guide the design.

The Early under-chapel of the Holy Blood was also in a condition of total denudation painful to see—the first stage, evidently, of a complete "restoration."

The interior of the Hôtel de Ville adjoining was likewise in the restorer's hands. The ground-story has already passed through them. Here (if memory serves me) was no antiquity to preserve, and the work, which is practically new *ab initio*, must be pronounced admirable—it has all the robustness and simplicity of old design.

The partial restoration of the great church of Lisseweghe, situate between Bruges and the sea-coast, was approaching completion. Without a precise recollection of its previous state, the conscientiousness of the restoration cannot properly be judged; but it is safe to say that the building had been badly used. At present, the brickwork of the walls and vaults of the eastern limbs has been exposed and pointed, and the ashlar dressings have been made good. The spic-and-span appearance of the whole suggests that the work might have been more conservatively carried out. The further question arises—how far is it right to strip brick walls of their covering? Was the brick-face the original and intended finish? Internal brickwork has always a somewhat crude effect. In itself, this of Lisseweghe is a very interesting specimen. It appears to date from before 1200, and is built in Flemish bond with blocks about 12 in. by 5½ in. by 3 in. The new rood, which had just arrived, is not of the best school of Belgian art.

An instance of over-zeal in restoration, coupled with deficient technique, might be seen at Mechlin, where the rich buttresses of the great tower were under treatment. That is to say, the substance of them was being mercilessly cut away and replaced with brand-new material: no tender consideration, no careful patching of the venerable stonework, but simple substitution of new for old. Part of the adjoining aisle has been refaced with stonework of lifeless regularity, the surface dressed in a manner quite unpractised of the Mediæval mason. What happens to the time-worn fragments thus removed? Some of them perhaps find their way to the City Museum. This ossuary of architecture contains many interesting relics of local work. Yet when, some half-dozen years ago, the Malinois thought fit to abolish the ancient crane that stood upon their quay (one of the few survivals of its kind), they found no place for it in their Museum beside such other open-air objects as the gallows and pillory. Perhaps the association seemed too suggestive to the authors of the vandalism.

With respect to the Cathedral of Mechlin, the destruction of the trees on its south side is a further violation of æsthetic fitness and conservative feeling. They have made way for a paltry garden-plot laid out in miniature with starveling shrubs, and carefully fenced in with a stiff dwarf-railing of cast-iron. The effect is insignificant to a degree. On the other side of the church still stands a stately group of trees. Their regular ranks and solemn shade have an architectonic character befitting the position; while the constant and delicate motion of their summits seems happily to accentuate the majestic immobility of the giant tower overhead. It is impossible to conceive how anyone can have been so void of imagination, so wanting in a sense of grandeur and congruity, as to substitute the garden—and such a garden—for the grove. A similar vandalism was carried out some years ago at Bruges, when the trees about the churches of S. Sauveur and S. Gilles were cut down. Since then, the precincts of various Brugian churches have been partially enclosed and laid out. The idea of enclosure is a good one; but the posts and rails of the fencing are in general so very ugly, so aggressively modern, the laying-out of the ground is so fanciful, that the gain is doubtful. Surely it does not require special acuteness to perceive that a treatment which might set off a modern villa is wholly unsuitable to a Mediæval church.

These operations in forestry may have been prompted by the *opening-out* fallacy which acts so detrimentally to "atmosphere" and "scale." Why is it that the first view of the vast Palais de Justice at Brussels—and, for the matter of that, of St. Peter's at Rome—is so unimpressive relatively to the size of the buildings? Undoubtedly because of the extent of direct approach in both cases. I was informed that a clearance is contemplated in connexion with the Hôtel Gruythuyse at Bruges, involving the demolition of some picturesque old buildings. It is to be

hoped not. This interesting edifice has already suffered too much from a misconception of the restorer's duties. At the time of my visit, the uncompleted portion was reduced to a mere shell of masonry. Now the former state of the interior and its adaptation to fresh purposes may have required considerable changes to be made; but from the point of view of archæology, a restoration which must be preceded by ruin had better be left undone. Moreover, the fine old weather-stained stone dormers have been completely rebuilt. Not only do they come brand-new from the hand of the nineteenth century workman, but a trace of Renaissance work grafted on the Gothic has vanished in the process. On the other hand, some of the completed apartments in this building are admirably fitted up with tiles, glazing, and other finishings of excellent character.

The cleansing of the once universal whitewash from the old façades in which Bruges is so rich proceeds as it has done during this last decade or two, exposing once more the beautiful brick-work of centuries, in tones varying from delicate yellowy-pink in the older buildings to bright, rich red in the later ones. The gain in cheerfulness and warmth of effect is incalculable. Sometimes the process is accompanied by structural restoration, and an excellent example of this can be seen in a row of gable-fronts in the Rue aux Laines, where the green woodwork and touches of gold on the stone charmingly contrast with the light brick walling. At other times the new detail is evidently by unskilled hands, and even where tolerably "correct," the thing is often overdone. Excess of elaboration and want of repose is the general failing of recent works in Gothic style at Bruges, but these, various and important as they are, stand outside the province of these notes.

W. RANDOLPH.

DR. ROWAND ANDERSON ON ARCHITECTURAL EDUCATION.

IN his Presidential address to the members of the Edinburgh Architectural Association last week Dr. Rowand Anderson dealt at some length with the question of compulsory examination, architectural education, and affiliation of provincial societies with the central Institute. On this subject, he said:—

"There are certain changes impending and influences now at work that affect, not only our Association specially, but all who follow architecture and the allied arts, which we shall have to face and seriously consider. The first is the burning question of education and compulsory examination of qualifications for following the business of an architect, and second, the action of the Royal Institute of British Architects in London in dividing up the whole kingdom into architectural provinces or districts, in which the societies presently allied, or to be allied, to the Royal Institute would be the respective centres. It is officially stated that the object of this is to promote architectural education, to consolidate the profession by bringing into harmonious and united action its scattered and unorganised members, and by combining with the Royal Institute to promote the well-being of the whole profession. This I fear would not be the result. According to this scheme, the President of an allied society may have an ex-officio seat on the Council of the Royal Institute,, and it is intended that the Fellowship of the Royal Institute shall be an indispensable qualification for holding the offices of president and vice-president of such allied societies. The constitutional rules and by-laws of allied societies must be approved of by the Royal Institute, and no addition or variation can be made on them without previous notice to and approval by the Council of that body.

Now, how is all this going to affect our Association? I may state that the subject has been before our Council twice, and on both occasions it was decided to do nothing, but to remain as we are; doubtless, however, the matter will be brought up again. Our Association is in its constitution unlike most, if not all, other institutes or associations. These latter consist solely of people engaged in the business of architecture, any member not so engaged being admitted under the designation of honorary member, and consequently having no voice in, or control of the affairs of the body. The Edinburgh Architectural Association, on the other hand, is a composite body and consists of architects and their assistants, painters, sculptors, decorators and all followers of the other arts, and in addition, a large number of lay members, who are interested in and support the Association because of their love of art. We have a total membership of about 300. In this number are comprised ninety architects and their assistants, about sixty representatives of the allied arts, the remaining 150 being lay members. Any member of our Association, no matter what his occupation may be, is eligible as a member of council, and may fill the offices of president or vice-president.

You will see from this that there is an essential difference between our Association and all others. The latter are organised and exist almost exclusively for the benefit of architects. We exist for the benefit of architecture and the allied arts, and for this reason I consider our constitution the preferable one, and that the greater number of lay members we can induce to join us and to take an active part in the management of our affairs and work the greater will be our strength and influence.

One effect of affiliation with the Royal Institute would be to debar any member not an architect from holding office in our society, and if we fall in with this scheme the result will be that we must eventually become as other professional associations. This would, in my opinion, be a misfortune, as I believe that we can do and are doing more good for art and artists, by interesting and educating the public in a knowledge and appreciation of our work, and that it is better we should co-operate with a large body of the laity in spreading a knowledge and love of art, rather than confine ourselves to the interests of architects alone. I cannot see what advantage it would be to us to have our rules and by-laws approved of by a central body in London, and to surrender the right to modify them without its consent. I should say we know our own minds, circumstances, and wants better than any body 400 miles away, and I see no advantages disclosed in the scheme that would compensate for the change that must follow in the present constitution of our body. I cannot but think that a central body in London controlling every society in the kingdom would have a disastrous effect. In art, vigour, activity, progress, and that elasticity requisite for adjusting itself to the constantly-changing circumstances of time, society, and locality, can only exist and flourish in freedom, and even the reaction on the central body in London would be equally bad. The business could not be carried on without a paid staff, who would speedily capture the whole management and initiate a lifeless and crushing routine, throwing back the progress now at work for many a year.

But something more serious is waiting your consideration. There is a rival society, in London, to the Royal Institute, called "The Society of Architects and Surveyors." This body has now before Parliament a Bill to provide for the compulsory registration of architects. The leading provisions of this Bill are:—

1. That anyone calling himself an architect and in practice after the first day of January, 1896, will be subjected to a penalty of from 20*l.* to 50*l.* unless he is registered.

2. A compulsory examination as to qualifications is to be essential.

3. No person can recover fees as an architect unless he is registered.

4. No person can hold any appointment under any city or urban sanitary authority, or the like, in relation to the preparation of plans and sanitary or structural arrangements unless he is registered.

5. There is a liberal provision of fines and imprisonment for circumvention and breaches of the Act.

As an inducement to support this Bill, it is stated that a large number of practising architects will be represented on the General Council of the new body, and that there will be a number of appointments to be competed for, such as registrars, secretaries, and treasurers, clerks and servants to the General and Branch Councils. All the officials are to be paid, and also all fees and travelling expenses for attendance at Council meetings.

Four Members of Parliament back the Bill. How many more will support it remains to be seen. Of course the Royal Institute and many other societies will petition against the Bill, but one must remember that there is an overwhelming majority of people calling themselves architects outside the Institute, who, with the prospect of lucrative appointments dangling before them, may support this Bill.

While I think the whole thing utterly bad and unworkable it may receive support, particularly as what this Bill proposes to do is the logical outcome of the present educational movement, for you cannot force people to undergo a special training over and above ordinary education as a qualifying condition for earning their living, unless you give them certain privileges and advantages in return, which will exclude from their field of operations all so-called unqualified competitors. And this brings me to the burning question of education and compulsory examination.

It is, perhaps, a little difficult to argue out this quite freely without suggesting to some that one is opposed to education. This is not so.

Primary, secondary, or University education is not to be called in question. It is the education of an architect in those specialities that are said to be necessary for the successful carrying on of his business, and for the protection of the people who are to employ him, with which we have to deal.

This is undoubtedly a problem which for some time will be the subject of much difference of opinion. It has divided architects into two camps, each holding very strong views and having much to say in support of them. In dealing with this question I wish to avoid dogmatism and rather to contribute to the clearing up of a confessedly difficult problem such thoughts as have occurred to me from time to time. Those who advocate this special education and compulsory examination say that the ranks are crowded with incompetent and badly-educated men and that consequently the good men and their art suffer in prestige and public estimation; that the public should be protected from this incompetent class; and that the only way to do so is to insist on special education, and its possession to be tested by compulsory examination before one begins business.

In working out this question one must keep in view one or two points.

1st. All the old buildings to which we look for inspiration were erected without anyone corresponding to the modern architect.

2nd. Admittedly many of the best architects of modern times are not the product of competitive examinations, and decline to countenance this new departure.

3rd. It is said that it is quite as necessary for an architect as for a divine, a lawyer, or a doctor, but at the same time it is admitted that the possession of the creative and artistic power necessary to make an architect cannot be discovered by compulsory examinations.

4th. That probably about 90 per cent. of the building executed in this country is done without the intervention of an architect, and that there is, therefore, only about 10 per cent. of building on which architects are employed.

Such work is carried out for a class more or less possessed of means and education, and who are not only able to take care of themselves, but who insist on controlling the architect, often very much to his sorrow; so much so that protection is frequently wanted more by the architect than the client. How often pressure is put upon one to carry out work in a much less substantial manner than one likes to do it, and how often even the architectural treatment is interfered with by the client, who tells you that what he insists on having is what he must have; that he knows what pleases him, and he is paying for it. Do you think that a few letters after one's name will change all this? I fear not, and that the client will still insist in having his views carried out, even in spite of your qualifications having been tested by examination.

Now, so far as protecting the public against those who design and erect buildings is necessary, it appears to me that those who erect the 90 per cent. of buildings are the proper subjects on whom to impose a qualifying examination, because, at present, the public have little or no control in the planning or designing of what they have to buy and live in.

Such works are put into the market by capitalists, speculative builders, and others who say they know what the public wants, and they endeavour to give them plenty for their money; and it often puzzles me to know how they do it; and until the present ideas and estimate of the value of art and sound construction held by the masses change for the better, no compulsory standard of education imposed on architects will alter the relative proportion of the work done by architects and by builders.

Again, if the architect must be subjected to a compulsory examination as to his qualifications, what is to be done with the mason and carpenter and all the other tradesmen who carry out his designs? Are they to remain unqualified and irresponsible? because it is of more importance that the man who carries out the work from the drawings should be compulsorily examined as to his qualifications. Here, again, if any protec-

tion is needed, the architect requires it. Often he is placed at the mercy of contractors who are forced upon him by the insane desire of public bodies and individuals to accept the lowest estimate, irrespective of character, financial standing, or experience. In the event of the business of an architect becoming a close one—and this is no doubt the ultimate object in view—what will happen? One more profession will be added to the list, access to which can only be obtained through the one portal of compulsory examination. You then bring into the field a class of men—and they are already at work here—who, by the declaration of the number of their successful passes, get you to believe that they can pilot you into the charmed circle, and they *can* do so unless you are uncommonly stupid. Once the profession of Art becomes a close one, and those who fellow it are hall-marked by public bodies authorised to do so, numbers will flock to it, not because they possess the essential qualifications, but because they can pass the qualifying examination; and our latter state will be no better than our present one. If by reason of the overcrowding of the profession the examination is made more severe, it is only in science, and history, and one or two minor matters that this can be done; but that will never demonstrate that the candidate possesses that intuitive sense of fitness and power of adaptation of means to an end, the creative power, the imagination and inventiveness, the keen sense of proportion and the harmonies of colour, all of which attributes combine to make the true architect. These may be absolutely wanting, because no compulsory examination can prove their existence, and yet the candidate will force his way through the gateway.

The analogy of the divine, the lawyer, and the doctor, is not applicable. In the case of the divine, he must be educated in a certain theology, and must be examined as to his knowledge of it, because he has to sign a declaration of his belief in it. In law and medicine, what the country does is to ensure that the laws of the realm will be interpreted and administered by a body of men specially educated; but a knowledge of the law does not guarantee sound judgments or wise counsel. In the case of medicine and public health, the country so far protects the lives of its citizens by seeing that there is a body of men educated up to the standards of the day in such matters, but it does not guarantee that the physician will diagnose correctly or the surgeon operate successfully: and you need not expect that the Government will ever interfere to protect you from bad art in buildings any more than from buying bad pictures.

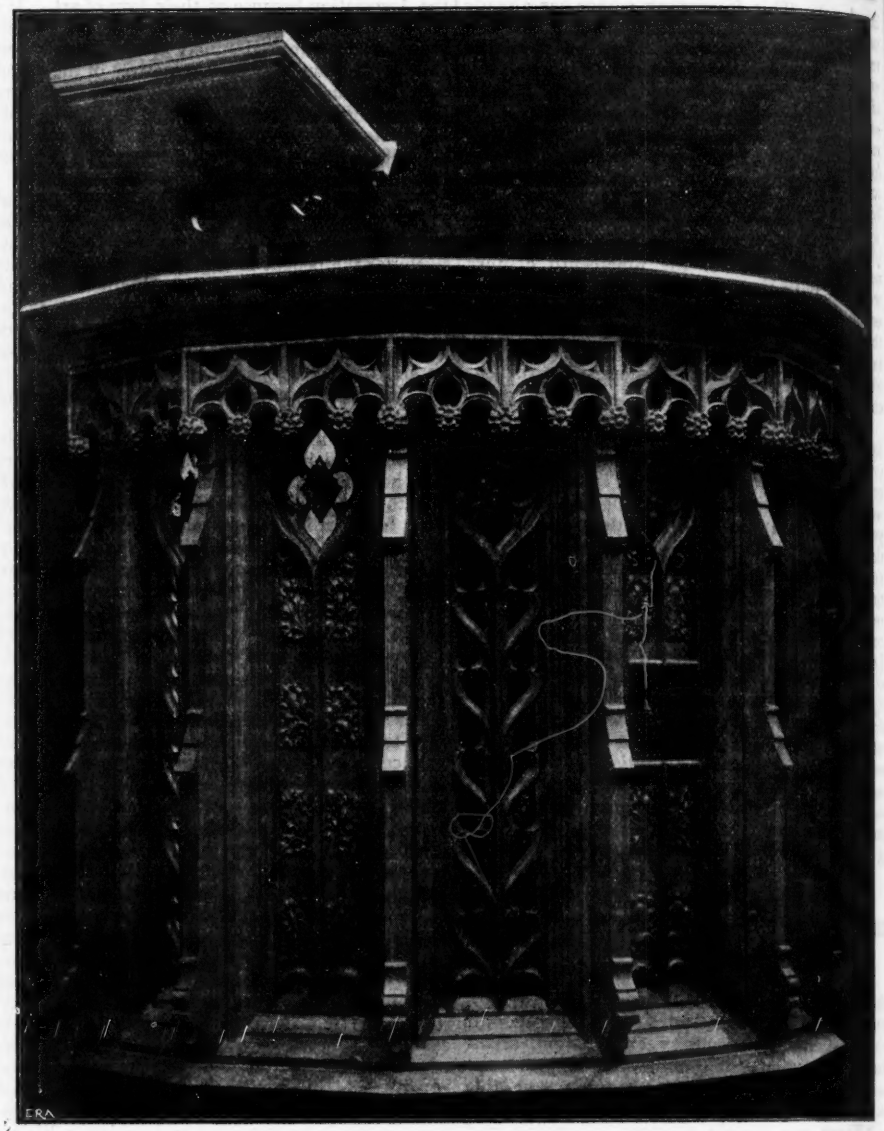
Art cannot spring up and flourish at the dictation and under the guidance of a central bureau. If it is to have any value or reality it must be the spontaneous outcome of the genius of the people, and it will vary with locality, traditions, the influences of literature and science, and many other things.

The solution of the question seems to me to lie in the increasing high standard of education for all classes, and the greater elaboration of the Building and Police Acts, and their stringent application by competent officials, alike to the architect, the builder, and the public. This will give all the protection that is necessary. But as far as protecting the public from the effects of bad art is in question, no amount of legislation can do that. Indeed, by far the larger part of the public don't want good art. They want what pleases them, and plenty of it for their money.

Art, and those who live by it, can only flourish and progress in absolute freedom and under the influence of a healthy public opinion. The public are our employers and paymasters, and they will always insist on and get what seems to them to be the right thing. At times it may be that they ask for what is utterly bad, and they will always get people to supply it; but where the people are educated, and their instincts are natural, they will ask only for what is good and true. Then, and not until then, will architecture and all its allied arts be in a healthy condition, and the incompetent and bad artist will disappear without the aid of compulsory examinations and diplomas."

PULPIT, ST. JOHN'S CHURCH, BOSCOMBE.

The illustration represents the upper portion of a pulpit executed by Messrs. Harry Hems & Sons for St. John's Church, Boscombe. Messrs. J. Oldrid Scott and C. T. Miles are the joint architects for the church.



Pulpit, St. John's Church, Boscombe.

INSTITUTION OF CIVIL ENGINEERS.

At the ordinary meeting of this Institution on the 19th ult. Sir Benjamin Baker, K.C.M.G., the President, in the Chair, the paper read was entitled "The City and South London Railway, with some Remarks on Subaqueous Tunnelling by Shield and Compressed Air," by Mr. J. H. Greathead, M.Inst.C.E.

The Act of Parliament authorising the construction of the City of London and Southwark Subway between King William-street, City, and the "Elephant and Castle," Newington, was passed in 1884, and in 1887 powers were granted for the extension of the line to Stockwell. Starting at King William-street, near the Monument, at a depth of about 70 ft. below the surface, the railway ran under the river Thames at a maximum depth of 73 ft. below high-water level, and under the southern approach to London Bridge southwards to the junction of the South Lambeth- and Stockwell-roads. The two lines were, excepting at the termini, carried in separate tunnels.

A temporary stage and shaft having been constructed in the river, immediately behind the Old Swan Pier, near London Bridge, the shield for driving the upper tunnel was lowered into position, and tunnelling was commenced southwards in clay. The second tunnel was started from the temporary shaft at Old Swan Pier immediately underneath the first, but was brought to the same level as the first at the south bank of the river, and then carried parallel with it under Hibernia Chambers and the South-Eastern Railway. On the completion of the iron tunnels under the river, the 25-ft. lift-shafts at the "Borough" and "Elephant and Castle" stations, to be used in the construction of the tunnels, were sunk. Headings were driven under the street at right-angles to the course of the railway, and four shields were lowered and rolled into position for driving the two tunnels north and south. The extension works were carried on at three points, viz., Kennington, the Oval, and Stockwell, and the operations on both sections proceeded simultaneously until the City section was completed. The tunnels on the first or City section were 10 ft. 2 in. in diameter, and were composed of rings 1 ft. 7 in. long, each consisting of six segments and a key-piece. Southwards of the "Elephant and Castle," the tunnels were 10 ft. 6 in. in diameter, in rings 1 ft. 8 in. long. At each of the stations for the length of the platforms, and at the termini for a greater length, enlarged tunnels were constructed in brickwork. At the termini these tunnels were 26 ft. wide and 20 ft. high from invert to crown, with walls 3 ft. thick. At the intermediate stations there were two 20-ft. wide tunnels, 16 ft. high from invert to crown. Access to the railway was obtained by lifts of which there were two in the 25-ft. shaft at each station, the depths varying between 43 ft. at Stockwell and 67 ft. at King William-street. The trains were driven by electrical locomotives which received power from a conductor placed upon insulated supports between the two rails. The signals were of the usual type, the absolute block-system being employed. The trains were lighted by electric incandescent lamps supplied from the main circuit.

A historical account was given of the use of the shield and of compressed air in tunnelling. The shield used for the 10-foot 6-in. tunnels between the "Elephant and Castle" and Stockwell consisted of a cylinder, 5 ft. 11 in. long, of steel plates in two thicknesses of ¼-in. each, riveted together to break joint with rivets countersunk on both sides. This cylinder was bolted to a strong ring of cast-iron at the front end, and to this ring were bolted the plates and channel-irons forming the face, and the adjustable steel cutters. The latter were so attached that they could be adjusted to cut out the excavation to the same diameter as, or wider than, the steel cylinder following them; the latter provision being necessary for passing round curves in any direction, either horizontal or vertical. The inside of the cylinder in rear of the face was lined with cast-iron segments, and to these were bolted six hydraulic presses of 6½ in. diameter. The

shields were at first made to do no excavation beyond the shearing off by the adjustable cutters of a thin slice of material round the circumference, but subsequently in driving through clay, the author introduced a series of wedges or piles in front of the face. The effect was to expedite the work and reduce its cost materially, the speed being practically doubled. The wedges were free to pass by the nodules of septaria, common in the London clay, without unduly straining the shield or presses. Grout of blue lias lime was forced by compressed air through holes in the cast-iron lining provided for the purpose. This was found to be a very important factor in the work—not only for preventing movements overhead and deformation of the tunnels, but also for several other purposes. The supply of compressed air used for grouting also afforded the means for ventilating the long tunnels during construction. In the earlier parts of the work a timber flooring was laid upon long temporary sleepers, resting at their ends upon the iron lining, and the excavated material was run out, and the iron, &c., brought in by manual labour. Subsequently the flooring was abandoned, the invert was filled with clay, and the work was accomplished by ponies upon a very unsatisfactory road.

At several points on the two sections of the railway compressed air was employed in passing through water-bearing strata. The most notable case was near the south end of the railway at Stockwell, where for a length of about 200 yds. the two tunnels were carried through coarse gravel and sand under a head of about 35 ft. of water. The tunnels were driven under normal air-pressure to a point where the cover of clay was reduced to about 5 ft., whence, the air-locks having been erected, they were continued under compressed air. It was generally found that the ballast immediately overlaying the clay contained less sand, and that of a coarser character, than in other positions, and it was in passing through this very open material that the work was most difficult. With such material as silt or fine sand, there was not much difficulty, provided there was a sufficient cover of material, because the porosity was not so great as to allow of the escape of a large volume of air, while maintaining a pressure sufficient to keep the bottom sufficiently dry; but in very coarse sand it would be impossible to maintain a pressure much higher than that due to the head of water over the top of the tunnel without special appliances and precautions. The difficulty consisted in having to work upon, so as to remove, the material from the front of the shield for the whole height of the face, and at the same time to prevent the inflow of a large volume of water, or the escape of an inordinate volume of air. In porous material, therefore, where a large volume was to be expected, and the conditions were such as to render pumping impracticable, compressed air was only to be considered if means could be found for preventing its too rapid escape.

The shield having been brought to the water-bearing strata, a small heading was driven at the top in advance, stout poling-boards being used to support the top, resting at one end upon the forward end of the shield. The heading was then widened out and the polings continued until about three-fourths of the circumference and the whole of the face had been poled. The two tunnels were driven side by side, under the large mains of the Lambeth and the Southwark and Vauxhall Water Companies, supplying an extensive area of South London, and under sewers and tramways without the slightest disturbance, and the system adopted had since been followed in driving several tunnels under the Clyde and elsewhere in Glasgow through sand, silt, &c.

It was sometimes advisable, and even necessary, to work with an air-pressure below that due to the maximum head of water in the material at the face. The workmen were thus benefited, and in some cases the work might be more safely carried out, as where there was a comparatively small cover of loose material under a river. In this latter case, a pressure in the tunnel corresponding to that of the head of water at the lowest point of the face being in excess of that due to the head of water at the highest point of the face by an amount depending upon the height of the tunnel, or of the portion of the face operated upon, would, in some cases, be sufficient to lift or blow up the cover at the face, unless other precautions were taken. The first air-lock used was of iron fixed in a bulkhead of brickwork. It was small and inconvenient, and the later air-locks were formed by reducing the size of the iron tunnel by a thick lining of brickwork and concrete.

The workmen employed in the compressed air on the City and South London Railway did not suffer from partial paralysis or "bends." The pressure was not high—about 15 lbs. per square inch—but from observations on this and other works the author considered that purity or impurity of air had, perhaps, more effect than pressure upon the health of the men engaged, provided due precautions were taken as to entrance and exit, the avoidance of chills, &c. It was noticeable that when tunnels had been driven through almost impervious material, as under the Hudson and St. Clair Rivers, and where, consequently, the quantity of air pumped had been comparatively small, the cases of "bends" were numerous, while in the gravel in London, both at the City and South London Railway, and more recently, at the Blackwall Tunnel, with a higher pressure, there were in the one no cases at all, and in the other no fatal cases had occurred. Where tunnelling was proceeding in fine sand or in silt, which were almost air-tight, the delivery pipes from the compressors should be extended to the face as the work progressed, in order that the air used in locking might assist the ventilation of the whole tunnel, and provision should be made for a copious supply of air to be delivered at the face. The more highly compressed air employed for grouting was useful for this purpose and for cooling the air, by expansion through a throttled passage, at the same time. This supply had on a serious emergency proved invaluable. In carrying the tunnels of the Glasgow Subway under the Clyde at St. Enoch's a fire occurred, filling the tunnel with suffocating gases and cutting off the men from the air-lock; and but for the air from the hose of the grouting-apparatus the whole gang would have perished. By lying down and receiving the air in their faces the men were able to live during the several hours that it took to reach them by breaking through from the second tunnel. A list was given, in an Appendix to the Paper, of the cylindrical iron-lined tunnels which had been similarly executed in various parts of the world.

At the meeting of the Institution on the 3rd inst., two papers dealing with the physical properties of iron and steel were read. The first paper was by Mr. John O. Arnold, F.C.S., and was entitled "The Influence of Carbon on Iron"; and the second, by Mr. T. Wrightson, M.Inst.C.E., was entitled "The Dilatation, Annealing, and Welding of Iron and Steel."

At the same meeting it was announced that fourteen Associate Members had been transferred to the class of Members, and that ninety-three candidates had been admitted as students. The first ballot of the session resulted in the election of five Members and 106 Associate Members, and of eight Associates.

ARCHITECTURAL UNION COMPANY, LIMITED.

THE thirty-eighth annual ordinary general meeting of this company was held on Wednesday, at 9, Conduit-street, Regent-street, under the presidency of Mr. James Edmeston.

The Chairman moved the adoption of the report, from which we give the following extracts:—"The directors regret to have to report that the rent of the Conduit-street Galleries having fallen into arrear, and Mr. Marriott being unable to continue his business, they have been compelled to accept a surrender of the lease, which was originally granted to Messrs. Freeman & Marriot. The directors are unable at present to say how much, if any, of the arrears are likely to be recovered from Mr. Marriott, but as Mr. Freeman was also liable under the lease, they have made fresh arrangements as to his remuneration, with a view to obtaining a partial recoupment. The directors have the satisfaction of announcing that negotiations are now in progress for reletting the Conduit-street and Maddox-street Galleries at a satisfactory rental. The Maddox-street Galleries having remained unlet during the past year, and the Conduit-street rent having been unpaid since the 25th March, and it also being desirable that, under existing circumstances, a larger cash balance than usual should be retained in hand, the directors recommend a dividend of 5s. per share only, for the present year."

Mr. Arthur Cates seconded the motion.

Replying to Mr. J. McVicar Anderson, who, along with Mr. Webb, represented the Institute, the Chairman stated that the adoption of the report would not commit the shareholders to anything. The report simply stated that negotiations were now in progress for reletting the Conduit-street and Maddox-street Galleries, and it was proposed that this matter should be dealt with after the transaction of the ordinary business.

Mr. Cecil F. J. Jennings (a director) contended that at the present moment there was a binding contract in existence, but nothing stated in the report could bind them.

The report was then adopted, and the retiring directors and auditors were re-elected.

Mr. J. McVicar Anderson moved the following resolution:—"That as a regulation under article 58 of the Company's articles, the directors be required not to let the galleries which form part of the building known as 9, Conduit-street, for any trade purposes, or to any tenants other than those mentioned in the company's share prospectus, so long as any such tenants desire to occupy them on reasonable terms." He understood it was proposed, although an offer had been put in on behalf of the Royal Institute of British Architects, to let the galleries to an outside firm of auctioneers. The prospectus of the company, which was issued in September, 1857, stated:—"This company is formed for the express purpose of providing a building suitable for the different societies connected with the art of architecture. The main object of the company will be to devote the whole of the premises to art, or scientific societies of a kindred character." The articles of association stated the company was established "for the purpose of providing accommodation for the different societies connected with archtctecture, and especially for the Royal Institute of British Architects, and the Architectural Exhibition." The memorandum of association, which, it was said, superseded these, although he very much doubted it, gave the directors power "to hire or purchase or erect new premises or hire or purchase old premises in order to form public and private meeting-rooms, galleries for exhibitions, or for holding large meetings of persons for all societies connected directly or indirectly with the architectural profession, art or science, and also for sub-letting or otherwise disposing of any part of the premises not required for the above purposes, as offices, club chambers, shops, or otherwise." It was obvious, therefore, that the Company was formed for the purpose of providing a home for art societies, and especially for the Royal Institute of British Architects, and the directors were morally bound, as honourable men, to maintain and abide by the plain spirit of their constitution. The Royal Institute of British Architects had paid their rent regularly, and, moreover, they had spent large sums of money in improving the premises. To let the galleries to auctioneers would, he maintained, be to act in direct defiance of the constitution, and would also be a breach of contract with the Royal Institute of British Architects.

Mr. Webb, in seconding the resolution, said he was authorised by the Council of the Royal Institute of British Architects to make a substantial offer of 700*l.* a year for the galleries. He sent that offer to the Chairman of the Company, and he had reason to know that it was duly laid before the Board and considered by them.

The Chairman stated that the firm of auctioneers referred to had expressed their willingness to give 750*l.* a year for the galleries. They had furnished references, but he believed they had not been in business before.

Mr. Anderson remarked that the directors surely did not consider an additional 50*l.* a sufficient inducement to let the premises to other people.

Mr. Cecil F. J. Jennings said there were 1,100 shares in the company, and he had received proxies to the extent of 593. It had been said than an offer to take the premises was made by the Royal Institute of British Architects, but that was not the case; it was only a tentative proposal, which might never be carried out. He held, therefore, that the directors were not justified in refusing a definite offer. They were bound as directors by the memorandum of association, and not by the prospectus, which was an absolutely non-existent document. If there was a breach of contract, the Institute had its remedy. The advantages to the Company of the proposed new arrangement were that the shareholders would get a better dividend; and that they would secure two tenants instead of one.

Mr. Dawson having spoken in favour of the resolution,

Mr. Cates said he thought the directors were under a moral obligation, as far as was consistent with their duties to the shareholders, to carry out the objects which were in the minds of those who promoted the Company. He had not been

Hôtel Métropole, Cromer. Messrs. G. J. & F. W. Skipper, Architects.

present at the Board meetings lately, owing to absence from town, and it was with considerable surprise he heard that an offer from a firm of auctioneers had been considered and accepted.

The resolution was carried, on a show of hands, by 5 votes to 3.

Mr. Jennings announced his intention of convening a special meeting of the Company to rescind the resolution.

HÔTEL MÉTROPOLE, CROMER.

We give the plan and a view of the street-front of this building, which has been erected in a central position on the summit of the cliff at Cromer, facing the sea, commanding most magnificent sea views, and having direct communication through its own grounds with the promenade and beach below.

The plan indicates the general arrangement of the ground floor, which is mainly occupied by entrance-hall, dining-hall, drawing-room, manager's-room, &c. The decorations of these apartments have been carried out in Japanese and Cordelova wall-hangings. The woodwork is chiefly of walnut. The entrance-hall has a canopied oak chimney-piece reaching from floor to ceiling.

The staircases are constructed entirely of stone, with wrought-iron and copper scrollwork balustrading. A hydraulic passenger lift, supplied by Messrs. Waygood & Co., runs to the top floors. The natural fall of the ground allows of billiard-room, reading and smoking-room, and private dining-room being placed under the dining-hall and drawing-room, thus obtaining for these rooms sea-views also. The gentlemen's cloak-room and lavatory are on this floor, and so are the kitchens and most of the offices. In a basement floor are the steward's room, servants' hall, &c.

The first, second, third, and fourth floors are occupied by bedrooms and private sitting-rooms, nearly all of which have been so arranged as to command good sea views. A feature of the scheme is the terrace arranged over the dining-hall, which is of easy access from the principal rooms of the building, affording an attractive resort for visitors who desire to enjoy the sea air and scenery without leaving the precincts of the building.

The sanitary arrangements have been carried out on the most modern and approved principles, and fire-hydrants are placed on every floor. The building has been furnished throughout by Messrs. Trevor, Page, & Co., Norwich, who also executed the chimney-pieces from designs supplied by the architects.

Externally the building is of red brick, and the roofs are covered with green slates. The decorative portions of the brickwork have been executed by Mr. G. Gunton, of Costessey, whilst the carving is the work of Mr. Minns, of Norwich. Messrs. Youngs & Son, of Norwich, are the builders.

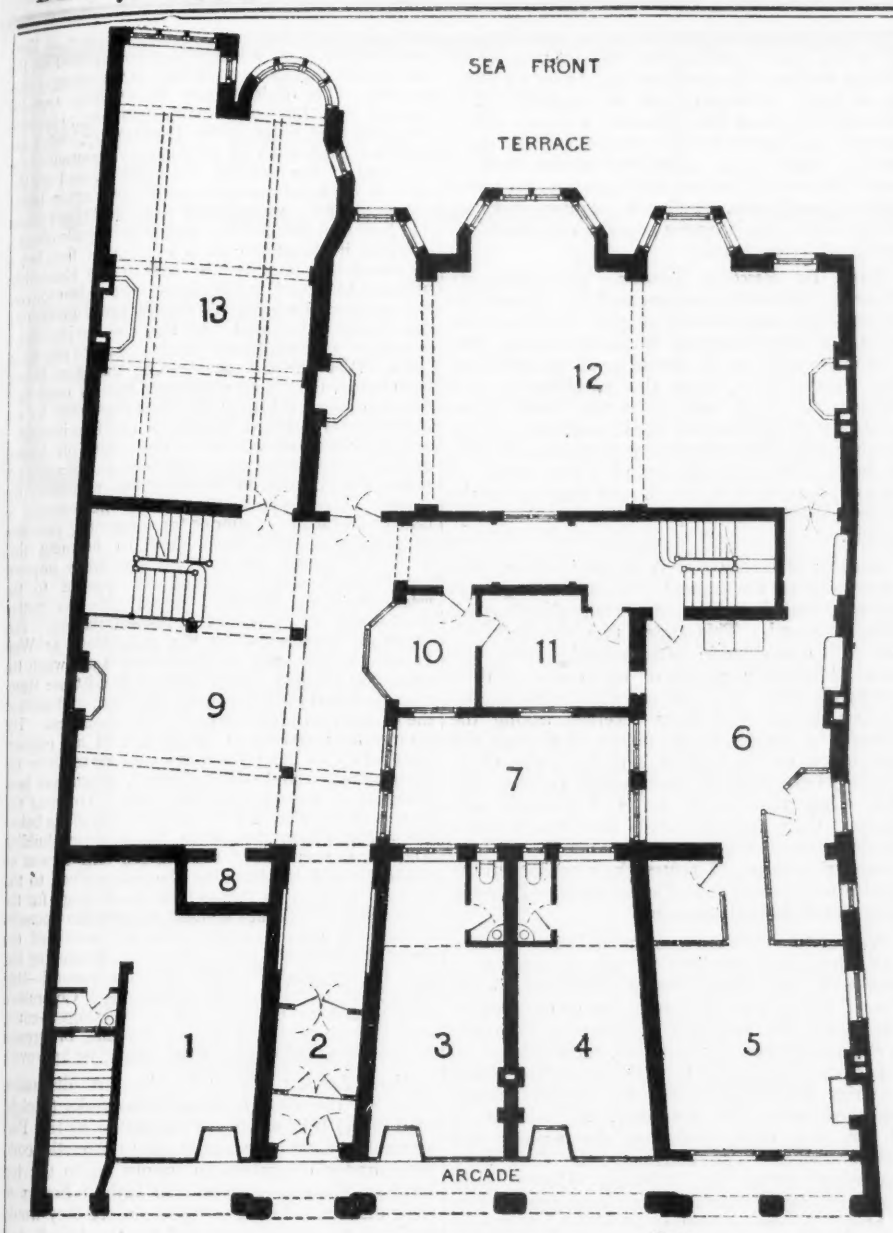
The architects are Messrs. G. J. & F. W. Skipper, of Norwich and Cromer, from whose plans and under whose superintendence the whole of the work, including the interior decorations, has been carried out. Mr. W. J. Bayes acted as clerk of the works.

THE BUILDERS' BENEVOLENT INSTITUTION:

ELECTION OF PENSIONERS.

The election of three pensioners on the funds of this charity took place on the 28th ult. at the offices of the Institution, 35, Southampton-row, Bloomsbury-square. Mr. J. Mowlem Burt, J.P., D.L. (President), occupied the chair, and amongst other friends of the Institution, there were present Mr. J. T. Bolding, Mr. T. Stirling, Mr. T. Stirling, jun., Mr. T. F. Rider, Mr. J. Howard Colls, Mr. C. Bussell, and Mr. F. Foxley. There were three vacancies for pensions, viz., for two men and one woman, there being three men and five women applicants.

At the close of the poll, the scrutineers (Messrs. T. Stirling and T. F. Rider) announced the result, which was as follows:—William Langridge, aged 76, builder, 18, Dorville-road, Hammersmith (first application), 1,817 votes; Thomas Warne, aged 68, builder, 114, Brecknock-road, N. (first application), 1,216 votes; Arthur Fuller Smith, aged 65, builder, 53, Mayfield-road, Dalston (first application), 109 votes; Mary Ann Healing, 20, Curtain-road, aged 65, widow of Samuel T. Healing, builder (sixth application), 850 votes; Maria Elizabeth Powell, 281, Albany-road, Camberwell, aged 62, widow of G. T. Powell, late a



Hôtel Métropole, Cromer.—Plan.

REFERENCES:

1. Shop.
2. Entrance.
3. Shop.
4. Shop.
5. Serving.
6. Serving.
7. Area.
8. Lift.
9. Hall.
10. Bureau.
11. Manager.
12. Dining Hall.
13. Drawing Room.

pensioner of the Institution (third application), 2,702 votes; Mary Ann Bowley, Tylers' Cottages, Ball's Pond, aged 68, widow of J. Bowley, late a pensioner of the Institution (second application), 763 votes; Eliza Ellis, 46, James-street, Oxford-street, aged 76, widow of E. G. Ellis, builder, (second application), 1,428 votes; and Ellen Batchelder, Camden-road, Carshalton, aged 62, widow of Charles Batchelder, builder (second application), 723 votes. The successful candidates were, therefore, William Langridge, Thomas Warne, and Maria Elizabeth Powell.

Votes of thanks were passed to the chairman and the scrutineers, and the proceedings terminated.

THE BERLIN INDUSTRIAL EXHIBITION.

THE importance of the Industrial Exhibition, which will be held at Berlin next year can scarcely be overrated, and there is little doubt of its being a great success. Everything from the initial organisation has been systematically and quietly done, and great care has been taken to avoid any trumpetting, or exaggeration of the scheme which might lead to disappointments, as was the case at Chicago. The site which was the subject of such acrimonious discussion can be considered a successful one, and the executive, with its able staff of architects is exceptionally powerful, the Works Department including the names of Bruno Schmitz, Karl Hoffacker, Herr Grieseback, and Herr Schring. The funds are ample, and if there is any drawback it is only the want of quick transit from the centre of the metropolis to the grounds, which is, however, now being rapidly overcome by the construction of electric trams and railways.

The Exhibition has the patronage of the Government, and this means much in a country where the public authorities are conscious of their responsibilities and power as regards improving national trade. Every possible facility is being given to the executive by the Government, even to the extent of officially calling the attention of all German "Colonies" resident in other countries to the show, by the aid of consular notices, and granting the concession of a lottery which is an invaluable adjunct for the budget. The municipality of Berlin voted 17,500*l.* towards the preliminary expenses and is now spending another 125 000*l.* in improving the roads to the grounds. Another 50,000*l.* is being spent in the same way by county or rural authorities who expect a handsome profit for their ratepayers. About 100,000*l.* are being spent on a new railway station and the connexion of the grounds with the Metropolitan Overhead Railway; and the expenditure on the rapid construction of the electric railway and tramways will be very high.

The superficial area of the grounds is practically the same as the area of the Paris Exhibition grounds of 1889, and the site is very wisely on the banks of the River Spree which forms one of the boundaries of the site and at the same time gives ample opportunity for passenger steamer traffic from various parts of the city. Railway embankments form the other boundaries. Comparatively speaking, the superficial area covered by the building will not be as large as at the great international fairs, as the scope of the Exhibition is limited to German Industries, and primarily to Berlin work. Nevertheless, the main building will cover about 40,000 square mètres, and there are blocks devoted to special sections, such as chemistry, which have frontages of 300 to 400 ft. The main building, it is understood, has been partially transfered from Antwerp, some of the old constructional parts being utilised. The largest spaces in the block have been given to electricity and general machinery divisions, the general metal, and wood industries, and the manufacture of wearing apparel. It would be premature to explain the division of the groups and sections, as there are sure to be numerous alterations in the programme before the opening day in May next, but it would be well to point out that the building trades and the arts and crafts take an important position in the Exhibition, coming second only to the machinery section and iron industries. Public works offices, such as the Municipal Building Department, will be most elaborately represented, the latter having gone to the expense of erecting a special building on a prominent position.

The pleasure side of the Exhibition has also received careful attention, one of the great features being a very well-planned scheme of "Old Berlin," and another of "Old Cairo," which covers an area of 35,000 square feet. Great care has been taken to keep the "fair" element outside the boundaries of the Exhibition proper, adjoining sites having been put at the disposal of the caterers of public amusements. The Exhibition theatre is preparing rapidly, and likewise the large assembly-hall, and the numerous "beer palaces."

Over two thousand workman have been regularly employed of late on the Exhibition grounds proper, and there is every reason to expect the punctual completion of the works. As in the case of all the minor exhibitions in Germany of late years, no attempt is being made to imitate palatial structures, but the *bonâ-fide* temporary construction is being shown.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A BUSINESS meeting of this Institute was held on Monday at No. 9, Conduit-street, Regent-street, Mr. Alex. Graham, F.S.A., Vice-President, in the chair.

The Chairman announced that at the Preliminary Examination held in London, Liverpool, and Newcastle on the 12th and 13th ult., 59 applicants had been exempted from attending; and out of the 63 examined, 37 passed, and the remaining 26 were relegated to their studies. The total number examined in London was 44, of whom 26 passed; in Liverpool 14, of whom 7 passed; and in Newcastle 5, of whom 4 passed. The following are the names of the 96 newly-registered Probationers:—

J. T. Alexander, North Shields; W. K. Anderson, Glasgow; H. P. R. Anson, Denmark Hill; R. D. Baillie, Cupar, Fife; G. L. Baillie-Hamilton, Waverton Rectory, near Chester; J. H. de C. Ballardie, Harrogate; Chevalier W. Beaumont, Tulse Hill, S.W.; C. H. Bennett, Birch Vale, near Stockport; D. H. Bentley, Richmond; C. G. Blood, Liverpool; A. B. Botterill, Weston-super-Mare; W. H. Bourne, Darlington; P. J. Bradshaw, Stamford; E. W. Bratt, Wednesbury; C. H. E. Bridgen, Tunbridge Wells; L. L. Bright, Nottingham; S. M. Brooks, Clapham Park; W. H. Brown, Bayswater; E. A. Campbell, Twyford; H. Cayley, Cambridge; A. S. Collard, Egremont; G. Colles, Cheadle Hulme, Stockport; H. L. Emile Merille de Colleville, Brighton; F. Cooper, Bolton; J. N. Cormack, Edinburgh; H. D. Crewdson, Alderley Edge; L. S. Crosbie, Camberwell; E. Dakers, Dundee; E. Xavier Aimé Dammany, London; W. C. Dickinson, Islington; G. R. Ellis, Millfield, Peterborough; P. H. Finney, Derby; J. A. Fletcher, Halifax; G. Fordyce, Aberdeen; R. A. Galloway, Edinburgh; K. Gammell, Weston-super-Mare; W. Gauldie, Dundee; A. E. Gibbins, Brighton; J. H. Gibbons, Manchester; T. H., Gibbs, London; P. E. Gloyn, Wandsworth, S.W.; H. H. Goodall, Nottingham; A. H. Goslett, Stanmore, Middlesex; W. C. Green, London; L. C. Gregory, Ravenscourt Park, W.; E. Harley, Camberwell Green, S.E.; S. G. Highmore, Poppleton; E. J. Hodgson, South Kensington, S.W.; C. E. W. Hope, West Norwood; J. D. Hunter, St. John's Park, N.; I. M. Kent, Norwich; F. A. King, Camden Town, N.W.;

A. V. Kislingbury, Finchley, N.; W. G. Lawton, Salisbury; F. J. Lobley, Norwich; J. H. K. Loos, Sydenham, S.E.; W. Mackinnon, Gordon-square, W.C.; A. J. Marsh, Sale, Cheshire; H. F. Mence, Camden-road, N.W.; A. T. Miller, Dover; R. T. Miller, Hercules-road, S.E.; J. Milne, Aberdeen; R. J. Mules, Mansfield; B. S. Murphy, Edinburgh; G. S. Nicol, Acocks Green, Birmingham; G. F. M. Ogilvy, B.A., Edinburgh; W. C. Oman, Tottenham, N.; T. Overbury, Cheltenham; H. J. Pearson, Brixton, S.W.; J. B. Pentland-Smith, Edinburgh; A. R. P. Piercy, Stoke-on-Trent; J. M. Piric, Aberdeen; W. O. Quayle, Ramsay, Isle of Man; H. R. Rainey, Burford, Oxon; T. H. Russell, St. John's Wood, N.W.; A. McIntosh Rutherford, Aberdeen; E. D. M. Scrivener, Newcastle, Staffordshire; H. W. Sefton, Bolton; A. E. Senior, Newcastle-on-Tyne; J. Sidey, Montrose; G. Singers, Aberdeen; H. P. K. Skipton, Sutton; G. T. Smith, Aberdeen; J. Smith, Glasgow; W. R. Smith, Broughty Ferry; G. A. Soames, Blackheath, S.E.; R. G. Sparrow, Nottingham; W. B. Stonebridge, Oakley, Bedfordshire; F. Vause, Whitby; L. F. Ward, Birmingham; W. C. Watson, London; Daniel West, Southsea; H. M. Whiddington, London; V. Wilkins, London; A. Wingate, Glasgow; J. A. Woore, Derby.

The following gentlemen were also elected:—as Fellows:—Harry William Roberts, Leicester; Charles Thomas Miles, Bournemouth; George Hubbard, 23, Finsbury Circus, E.C.; Herbert Osborn Cresswell, 30, Craven-street, Strand; Herbert Huntly-Gordon, 123, Cannon-street, E.C. As Associates:—F. W. Petter, Barnstaple; C. K. Mayor, Manchester; C. A. Sharp, 15, Leadenhall-street; H. Story, Birkenhead; W. Hawke, Thornton Heath, Surrey; E. Greenop, P.A.S.I., 40, Chancery-lane, W.C.; F. E. Morris, Reading; P. Leeds, 21, Parliament-street, Westminster, S.W.; G. G. Irvine, 60, St. George's-road, S.W.; H. Hutt, Reading; H. G. Watkins, Lincoln; R. S. Besant, 26, Bedford-row, W.C.; A. J. Dunn, Edgbaston, Birmingham; J. A. E. Lofthouse, Middlesbrough; G. Cowan, Portsmouth; G. J. T. Reavell, H.M. Office of Works, 15, Whitehall-place, S.W.; W. C. Waymouth, Great Trinity-lane, E.C.; C. M. Shiner, 2, Walbrook, E.C.; F. B. Dunkerley, Manchester; S. W. W. Delves, Tunbridge Wells; E. G. Collins, 6, Stratton-street, W.; E. Penfold, Reigate; O. Middleton, Cheltenham; R. Messenger, 7, Arundel-street, Strand, W.C.; J. H. Shaw, 22, Billiter-street, E.C. As Hon. Fellows:—E. Falkener, a Knight of the Dannebrog; an ancient member of the Academy of Bologna, and of the Archæological Institutes of Rome and Berlin; Glanymor, St. Clears. Sir F. Leighton, Bart., President of the Royal Academy of Arts (Royal Gold Medallist 1894); Foreign Associate of the Institut de France, Member of the "Ordre pour le Mérite" of Frederick the Great; 2, Holland-Park-road, W. As Hon. Corresponding Members:—Professor V. Schröter, Architecte de la Direction des Théâtres Impériaux, architecte-en-chef de l'Administration Générale des Appanages; Alexeieffskaja 2, St. Petersburg. H. J. Stübben, Kgl. Baurath, and Beigeordneter der Stadt Köln; Sachsenring 82, Cologne. F. C. Heimann, Stadtbaurath, Kgl. Bau-Inspector-a-D.; Victoria-strasse 5, Cologne.

Mr. G. A. Middleton then criticised some of the questions set on the Science side of the Intermediate and Final Examinations, and subsequently there was an exhibition of Herr Schröter's drawings, lent for the evening by Mr. E. O. Sachs.

The next meeting is on the 16th inst., when Dr. Max Ohnefalsch-Richter will read a paper on "Græco-Phœnician Architecture, with especial reference to the Origin and Development of the Ionic Volute."

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday, at the County Hall, Spring Gardens, Sir Arthur Arnold, Chairman, presiding.

Loan for a Town Hall, &c.—On the recommendation of the Finance Committee loans were granted of 10,000*l.* to the Battersea Vestry for road improvements, and 25,000*l.* to the Hammersmith Vestry for a new Town Hall, &c. The works proposed to be executed in Battersea comprise the laying (in sixty-five roads and streets) of 6,247 yards of Stirlingshire granite channelling, 9 in. by 6 in. by 4 in., four courses in width, placed upon a bed of lime concrete 6 in. in thickness; 7,982 yards of scoriæ block, 9 in. by 5 in. by 4 in., on a similar bed of concrete; and 19,944 feet run of granite kerbing, 12 in. by 8 in., at a total estimated cost of 10,207*l.* The Council's Engineer has examined a sample of the granite and scoriæ blocks proposed to be used, and as there is no experience of the wear of scoriæ blocks in London traffic, and as they look inferior to granite, he is of opinion that the repayment of the loan for these blocks should be restricted to ten years.

Land in Rosebery Avenue.—The Corporate Property Committee recommend the Council to authorize the expenditure of 450*l.* for alterations at 114, Farringdon-road, Rosebery-avenue. Mr. Taylor moved, as an amendment, seconded by Mr. Burns, M.P., that the specification and estimate should be referred to the Works Committee for the purpose of the Committee carrying out the work. The amendment was, on a division, carried by 52 votes against 48. The object of the proposed work is to give an impetus to the letting of several vacant plots of land in Rosebery-avenue.

Trinity Almshouses.—A special report was received from the same Committee in regard to the proposed demolition of Trinity Almshouses, Mile End-road. This stated that the buildings were of considerable architectural merit, and were additionally attractive by reason of their occupying two sides of a grass quadrangle. Various letters had been received asking the Council to do all in its power to prevent the destruction of the buildings, and, as the Committee believed it to be the general opinion that their demolition would be a Municipal misfortune, they recommended that the Council should express a strong hope that the Charity Commissioners would refuse their consent to the application of the Trinity Corporation.—This was agreed to without discussion.

Hydrants.—On the recommendation of the Fire Brigade Committee it was agreed that, subject to an estimate being submitted to the Council by the Finance Committee as required by the statute, the Lambeth Waterworks Company be requested to fix 337 hydrants, such hydrants to be obtained of Messrs. J. Blakeborough & Sons, in strict accordance with the sealed pattern deposited with the company, at a cost of 1*l.* 19s. 6d. each, including flange-piece and surface frame. The section to be dealt with comprises parts of Dulwich, Herne Hill, Norwood, and Sydenham, and contains an area of about 3¼ square miles, of which, however, about 1¼ square miles is not built over. The Committee were of opinion that in thoroughfares where the houses are set back at a considerable distance from the carriageway hydrants should be placed at from 250 ft. to 350 ft. apart, but that in thoroughfares in which the houses are smaller and nearer the footway the distance should be 450 ft. The pressure of water in the district having been taken in eleven places has been found to vary from 20 lbs. to 80 lbs. on the square inch, the average being 48 lbs. The cost of supplying and fixing the hydrants will probably be about 4,000*l.*

Proposed Palm-house for Battersea Park.—The Parks and Open Spaces Committee recommended that an expenditure of 2,000*l.* be authorised for the erection of a palm-house at Battersea Park, in accordance with the design prepared by the architect, and that inasmuch as the Chairman of the Works Committee was of opinion that the work was one which the Works Department was not in a position to execute with special advantage to the Council, the Committee be authorised to invite tenders. After a long discussion it was decided not to erect the building.

Photographs of Bridges.—On the recommendation of the Bridges Committee it was agreed that the Council's bridges be photographed for the purpose of protecting the Council's interests in the structures and their approaches. The work is to be entrusted to the Art Department of the Technical Education Board, at a cost of about 110*l.*

Result of Legal Proceedings.—High Buildings in Kensington Court.—The Building Act Committee reported as follows, the recommendation being agreed to:—

"In April, 1892, a building was erected without the Council's consent on the south side of Kensington Court, of greater height than the width of the street, in contravention of the provisions of Section 85 of the Metropolis Management Act Amendment Act of 1862. Proceedings were taken by direction of the Council against the builder, and on November 14 following the magistrate before whom the case came dismissed the summons, with 10*l.* 10s. costs against the Council, holding that, the main front of the house being in Kensington-road, the building was not erected on the side of Kensington Court within the meaning of that section. This decision was successfully appealed against, and the case remitted to the magistrate to adjudicate upon. On October 17, 1893, the builder's application for the Council's consent to the retention of the building was refused: and on the 24th of the same month the case came again before the magistrate, who stated that the High Court had held that the building had been illegally erected, and that he must impose a substantial fine, but it was hard law, and that he wished the Council to understand that if proceedings were taken for continuing penalties he should consider that a very small fine should be imposed. In this case he imposed a penalty of 3*l.*, and ordered the defendant to pay 5*l.* 5s. costs. Proceedings for continuing penalties having been taken, the sitting magistrate has on more than one occasion acted upon the view expressed by the magistrate who heard the case in the first instance; and when the case was before the Court on August 25 last, a suggestion was made that some arrangement might be arrived at with a view to ending the matter. Upon this we instructed the solicitor to take out a further summons for continuing penalties in respect of fifty days, and to intimate that if the full penalty of 40s. per day were imposed the Council, whilst refusing its consent to the retention of the building, would take no further proceedings for penalties in respect thereof. This summons was heard by the magistrate at West London police-court on November 15th, when the defendant pleaded guilty, and the magistrate thereupon inflicted the full penalty of £100, and ordered the defendant to pay the cost of the summons. The arrangement arrived at, while not in all respects satisfactory, is the best that could be made in the circumstances, and ends litigation, which has been going on for more than three years. This was one of the cases referred to in the evidence given before the Select Committee when the London Building Act, 1894, was before Parliament, and it was no doubt helpful in obtaining the power given to the Council under that Act to take proceedings for the demolition of buildings erected, without the Council's consent, of greater height than the width of the street in which they are situated or contravening the Act in any other respect. We recommend—that the course taken by the Building Act Committee with regard to the building in Kensington-court, erected without the Council's consent, of greater height then the width of the street, be approved.

East London Water Supply.—A discussion arose on the East London Waterworks (Height of Supply) Bill, which, as submitted by the Parliamentary Committee, proposes to place the company under obligation to supply up to the top level of the top story of the highest houses in their district. In the event of failure they would be liable to penalties of 200*l.* for the default, and 100*l.* a month for a default which continued as long as a month.

Mr. C. Harrison, M.P., moved to increase the penalty to 100*l.* a day, which was rejected, and the Bill was approved.

Workmen's Trains.—It was resolved that a communication be addressed to the Government pointing out the desirability of an inquiry being made upon the subject of workmen's trains and the operation of the Cheap Trains Act, 1883.

Work for the Unemployed.—Mr. Thompson moved:—

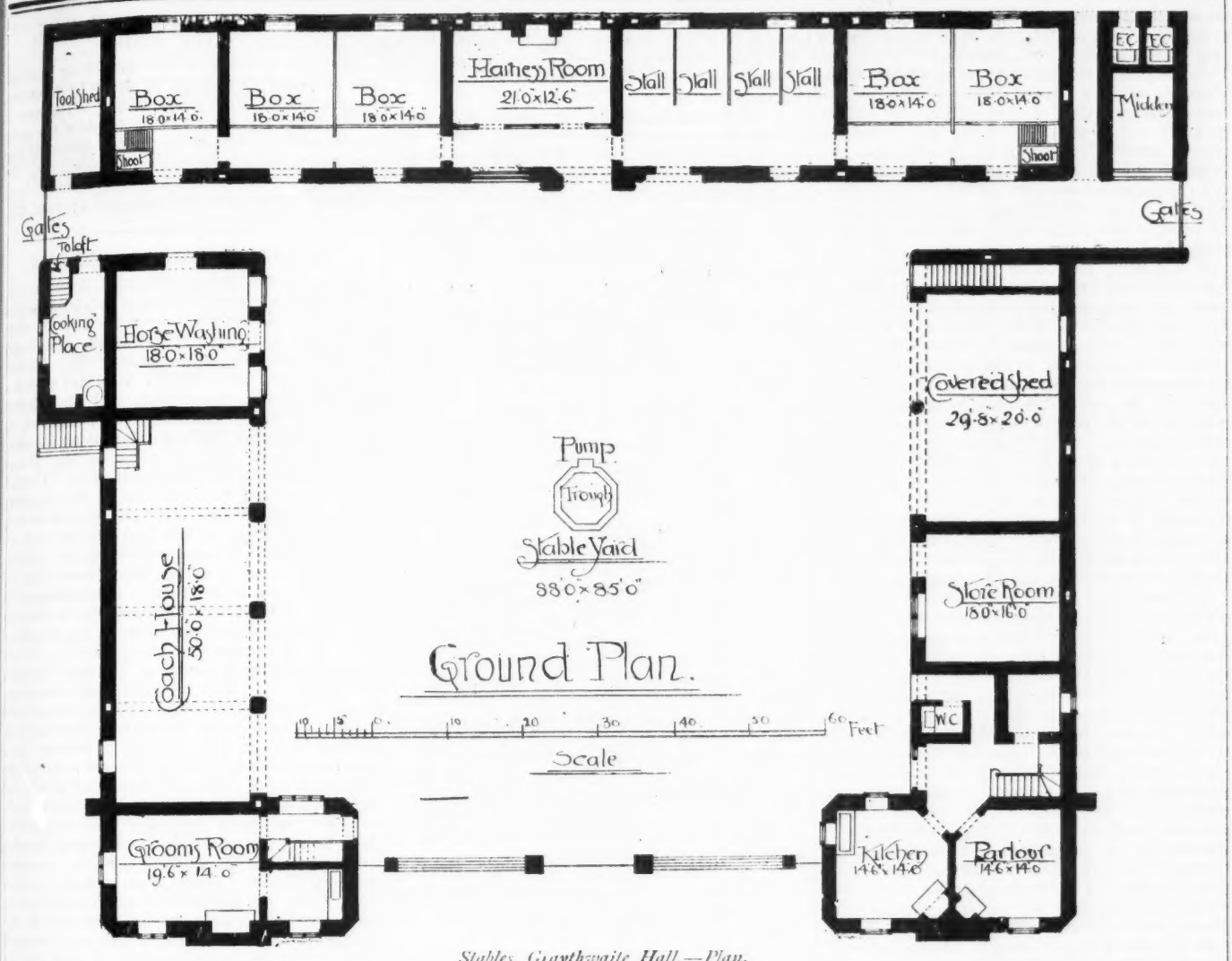
"That it be an instruction to all the spending Committees, in view of the growing evil of the want of employment among the working-classes during the winter months, and until the Government has found some permanent remedy to meet these occasions of exceptional distress, to proceed forthwith with all public work for which they have authorisation, and which may be legitimately carried out at this period of the year, having due regard to the interests of the ratepayers."

Mr. J. Burns, M.P., seconded the motion, stating that it was a plan which had been carried into effect automatically by the Committee of the Council for years past. The motion was agreed to, and the Council shortly afterwards adjourned.

COMPETITIONS.

Reconstruction of Municipal Buildings, Aberdeen.—The Town Council has appointed Mr. William Young, architect, London, as professional assessor in this competition, his fee to be 100 guineas, besides travelling expenses. Mr. Young, it will be remembered, designed the Glasgow Municipal Buildings.

The Mrs. Siddons Memorial.—The Committee have decided to entrust the execution of this work to Messrs. Farmer & Brindley. The sketch model selected by Sir Frederick Leighton, P.R.A., was made by their principal modeller, L. Chevalleand, from a treatment suggested by Mr. Brindley; this same artist will produce the full-size model. The marble proposed to be used



Stables, Graythwaite Hall.—Plan.

for the statue is the hard white of Mont Altissimo Serravezza, which up to now has not been used in England, nearly the entire produce having been reserved for Paris.

ROYAL INSURANCE COMPANY'S OFFICES, LIVERPOOL.—There is to be an important limited competition for designs for new offices for this company. Seven architects have been invited to compete, three in London—Mr. John Belcher, Mr. T. E. Colcutt, and Mr. E. W. Mountford; and four in Liverpool—Mr. J. Francis Doyle, Mr. Francis Holme, Mr. W. Aubrey Thomas, and Messrs. Woolfall & Eccles.

Illustrations.

PART OF WEST DOOR, REIMS.

THIS drawing, by Mr. G. C. Horsley, shows some of the statues in the west door at Reims Cathedral. They are remarkable both for the fine and broad treatment of the drapery, and for the individuality of style of the heads, which convey the impression of having been portraits from life.

BUTTRESSES, ST. ETIENNE LE VIEUX, CAEN.

THIS drawing, also by Mr. Horsley, interested us much on account of the striking and unusual treatment of the buttresses, which is most picturesque. In regard to the building itself, Mr. Horsley writes:—

"St. Etienne le Vieux, Caen, is a desecrated church used in 1886 as a storehouse for portions of the old work removed from the Abbaye aux Dames, which was then being 'restored,' to make way for the new work inserted in its place. I regret to say that amongst these remains of old masonry I came across the carving from the tympanum of the west door of the Abbey, a most interesting representation of the Trinity, which was perfectly well preserved, with the exception of a few cracks, which might easily have been made good with a little mortar. The carving now in the tympanum is a copy of this old work, and the rejection of the old work and the insertion of a copy in its place is one illustration of the terrible practice of 'restoration' pursued by the French Government."

BEDFORD COURT MANSIONS.

THIS building, of which we give a perspective drawn by Mr. Gerald Horsley, is one of a series of four blocks of residential flats. This one faces Charlotte-street on one side and the extension of Tavistock-street on the other, and is situated at the back of the houses in Bedford-square on the south side; it consists of one large building divided into three parts, with separate entrances, staircases, and lifts, and has a large courtyard in the centre, approached by an arched carriage-way. There are also separate staircases for tradesmen.

The building contains forty flats of various sizes. It is constructed with brick and stone. The whole of the facing of the two elevations shown are built of red brick with Portland stone dressings.

Mr. Allan F. Vigers is the architect as far only as the exterior treatment is concerned, he having been working in conjunction with Messrs. Martin & Purchase, by whom the plan was made. Messrs. Colls & Sons are the contractors.

THE STABLES, GRAYTHWAITE HALL, NEAR WINDERMERE.

THESE stables, which have been recently erected for Lieutenant-Colonel T. Myles Sandys, M.P., are situated about half-way between the Ferry and Lake Side, and near the Hall. They form a portion of the general scheme of restoration and improvements which has recently been carried out, and includes extensive alterations to the Hall, new Terraces, Gate-lodges, Bailiffs' and Keepers' houses, and many other works.

The stables, as will be seen from the plan, form three sides of a square, and include coachman and grooms' houses, and other usual accommodation. The materials used are the local rough stone, with red stone dressings, the upper parts being in black and white timber framing. The roofs are of red Staffordshire tiles, and the chimneys of red brick.

The contractors have been:—For the excavating and masonry, Mr. G. H. Pattinson, Windermere; carpentry, joinery, and tiling, Messrs. G. Woods & Son, Bootle, Liverpool; plumbing, Mr. Braythwaite, Ulverston; stable fittings, Messrs. Musgrave, of Belfast. All the work has been carried out from the designs and under the superintendence of the architect, Mr. R. Knill Freeman, F.R.I.B.A., of Bolton and Manchester.

The drawing from which the illustration is taken was exhibited in the Royal Academy of 1894, and included in the *Builder* "R.A. Album" for that year.

SMALL COUNTRY HOUSES.

OF these houses, No. 1 (the top in the left-hand corner) represents a detached house a short way out of London—the best out-look being towards the back, the principal rooms look in that direction. The upper floor contains seven bedrooms. It will be seen that the simplest treatment has been adopted, the building depending for interest on grouping and general proportion. The roofs are covered with local tiles, the lower story is faced with red bricks, and the upper rough cast. The total cost is about 1,500*l*.

No. 2 is a farm-house in Essex. The exterior is faced with red brick and tile-hanging, a small portion being half-timbered with oak and rough-cast filling. The cost is 1,800*l*.

No. 3 shows a small suburban house designed to be erected for the small sum of 1,150*l*. In this case all the joinery, &c., is of a very simple description, and the work throughout is of the most straightforward character.

The architect is Mr. T. W. Cutler, and the drawing was included in the last Royal Academy Exhibition.

NEW BY-LAWS AS TO SUBWAYS BY THE LONDON COUNTY COUNCIL.

THE following by-laws have been made by the London County Council under the provisions of the London County Council (Subways) Act, 1893, with respect to subways vested in the Council. The by-laws, as altered by the Board of Trade, were accepted at Tuesday's meeting of the Council. The by-laws do not apply to any pipe or wire authorised to be laid or placed by any provisional order or licence under the Electric Lighting Acts, 1882 and 1888, or under any special Act incorporating the said Acts or (in respect of such wires) to any company authorised to lay or place the same:—

"1. Fourteen days at the least before the day

on which any company, body, or person desires to place or bring any pipe or wire (other than a service-pipe or wire) into a subway, such company, body, or person shall give notice in writing to the Council of such desire, accompanied by full particulars in writing of the position and manner in which such pipe or wire (other than a service-pipe or wire) is proposed to be brought into and placed in the subway, and of the dimensions and full particulars of any pipe or wire (other than a service-pipe or wire) that is proposed to be placed or brought into the subway; and also the proposed method of supporting the same, and, in the case of a wire, particulars of the insulation and highest electro-motive force for which it will be used. No company, body, or person shall place or bring any pipe or wire (other than a service-pipe or wire) into a subway, until the Council shall have signified its consent in writing under the hand of its engineer to the position and manner in which such pipe or wire (other than a service-pipe or wire) is to be placed, and to the method by which such pipe or wire (other than a service-pipe or wire) is to be brought into the subway. Provided always that this by-law shall not apply in case of emergency or in case of the necessity for repair of any pipe or wire, or the replacement of a single length of pipe. Should any emergency arise, particulars in writing of any work done shall be forthwith sent to the Council's engineer.

2. Three days at the least before the day on which any company, body, or person desires to place or bring any service-pipe or wire into a subway, such company, body, or person shall give notice in writing to the Council of such desire, accompanied by full particulars in writing of the position and manner in which such service-pipe or wire is proposed to be brought into and placed in the subway, and of the dimensions of such service-pipe or wire, and in the case of a service-wire particulars of the insulation and highest electro-motive force for which it will be used. No company, body, or person shall place or bring any service-pipe or wire into a subway until the Council shall have signified its consent, in writing, under the hand of its engineer, to the position and manner in which such service-pipe or wire is to be placed, and to the method by which such service-pipe or wire is to be brought into the subway. Provided always that this by-law shall not apply in cases of emergency or in case of the necessity for the repair of any service-pipe or wire, or the replacement of any service-pipe or wire. Should any emergency arise, particulars in writing of any work done shall be forthwith sent to the Council's engineer.

3. Fourteen days at the least before the day on which any company, body, or person desires to take any pipe or wire out of a subway such company, body, or person shall give notice in writing to the Council of the manner in which such pipe or wire is proposed to be taken out of the subway. No company, body, or person shall take any pipe or wire out of the subway until the Council shall have signified its consent, in writing, under the hand of its engineer, to the manner in which such pipe or wire is to be taken out of the subway. Provided always that this by-law shall not apply in case of emergency or in case of the necessity for repair of any pipe or wire, or the replacement of a single length of pipe. Should any emergency arise, particulars in writing of any work done shall be forthwith sent to the Council's engineer.

4. A company, body, or person desiring to repair or alter any pipe or wire in the subway, or to replace a single length of pipe in a subway, shall (except in case of emergency) give three days' notice in writing to the Council of the nature of such repair, alteration, or replacement, and of the manner in which such repair or alteration or replacement is proposed to be made, and shall not commence such repair or alteration or replacement until after obtaining the consent in writing of the Council to the same under the hand of its engineer. Should any case of emergency arise, particulars in writing of any work done shall be forthwith sent to the Council's engineer.

5. Whenever a notice shall have been duly given in accordance with the foregoing by-laws, and the Council do not, before the expiration of such notice, approve, under the hand of its engineer, the proposals in such notice, subject to such amendments or conditions as may seem fit, or disapprove the same, and give notice of such approval or disapproval to the company, body, or person giving such notice, the Council shall be deemed to have given their consent to the proposals in such notice.

6. If, within fourteen days after particulars in writing of any work done in case of emergency shall have been received by the Council's engineer the Council shall, under the hand of its engineer, disapprove of such work, the company, body, or person by whom such work was done shall forthwith alter or amend it to the satisfaction of the Council, to be signified in writing by the hand of its engineer.

7. No company, body, or person shall commence the execution of any work which will involve the alteration and reconstruction of any part of a subway until the expiration of forty-eight hours after such company, body, or person shall have given to the owner of every pipe or wire in the subway notice in writing specifying the nature of the work and the time at which it is to be commenced.

8. No company, body, or person shall take into a subway any candle, lamp, or light other than a safety lamp of a pattern approved by the Council, or smoke, or take, strike, or use therein any match, except with the consent of and under conditions approved by the inspecting officer of the Council appointed for the purpose.

9. No company, body, or person shall open or raise any grating or other means of access to a subway or enter therein (except in case of emergency) without the consent in writing of the Council under the hand of its engineer.

N.B.—The keys of the subway entrances will be kept at such places, and by such officials, as may from time to time be appointed by the Council for the purpose; each company, body, or person having pipes in a subway will be supplied by the Council with a card stating the places at which, and the names of the officials in whose custody the keys are kept, which card shall be produced to the officials whenever application is made for access to a subway; and such officials will arrange for the opening and closing when required of the gratings or covers for persons entering or leaving a subway.

10. No company, body, or person shall allow any grating or other means of access to a subway to be opened or to remain open without providing a temporary fence or protection and leaving a watchman to guard the same.

11. No company, body, or person shall (except in cases of emergency) enter or remain in a subway between the hours of 6 p.m. and 6 a.m.

12. Every company, body, or person having a pipe or wire in a subway shall, within six months of the confirmation of these by-laws, deposit with the Council full particulars in writing of such pipe or wire, stating name of subway; date when first placed; position, dimensions, gauge, material, and purpose for which it is used or proposed to be used; nature of supports (if any); and within a further period of six months, if so required by the engineer of the Council, shall deposit with the Council a plan, on a scale of not less than 88 ft. to one inch, showing the position, with such detail drawings as the Council may require.

13. Every company, body, or person depositing the particulars and plan required by the last preceding by-law shall, once in every subsequent year, cause such particulars and plan to be duly corrected to date.

14. No, company, body, or person shall store materials in a subway, or allow any rubbish to accumulate or remain therein.

15. No person shall commit any nuisance in a subway.

16. All persons working or being in a subway shall conform to all reasonable requirements of the Council's officers.

17. Every, company, body, or person using a subway shall pay to the Council, on the usual quarter days in each year, fees and charges according to the following scale:—

(*a*) A charge of 5s. for each day or part of a day during which a pipe or wire is being repaired, or altered, or laid in or removed from a subway.

(*b*) A charge of 1s. for opening or closing a subway at any time other than that fixed for the daily visit of the Council's officers.

(*c*) An annual charge for use and supervision.

18. Any company, body, or person failing to comply with, or doing anything prohibited by, any of these by-laws, or any of the provisions of the London County Council (Subways) Act, 1893, or delivering to the Council any particulars or plans, or making any corrections therein, which to their or his knowledge are incorrect, shall be guilty of an offence against these by-laws, and shall be liable to a penalty not exceeding five pounds, and to a further penalty not exceeding forty shillings for each day during which such offence is continued after written notice of the offence shall have been given."

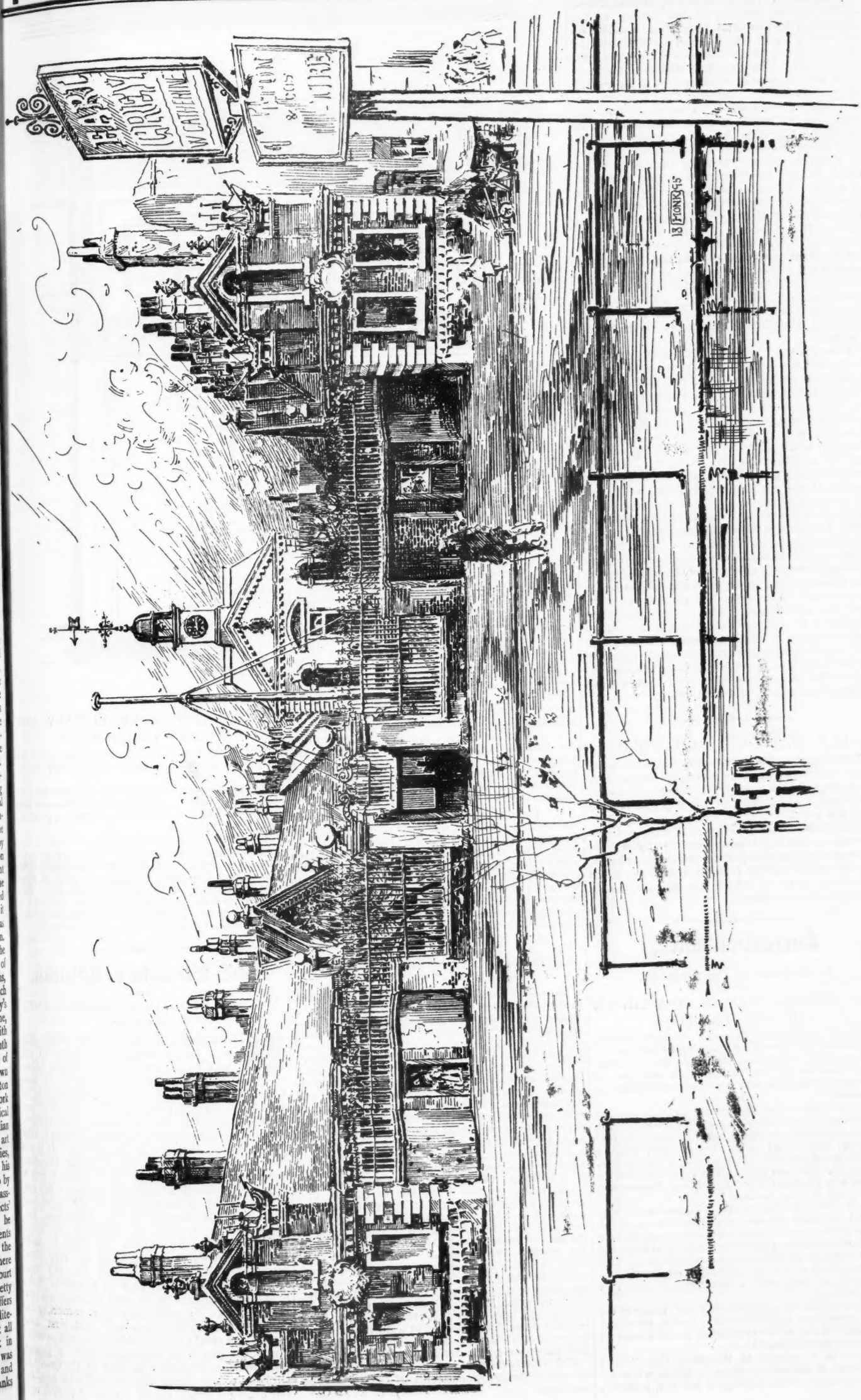
THE TRINITY ALMSHOUSES, MILE END.

WE give a sketch of this interesting building the proposed demolition of which by its owners has excited so much public feeling. The view is taken from the street, so as to show the street façade with its curious in-and-out treatment, and the leaden models of ships on the cornice. An account of the building will be found in a "Note" in our issue of November 23, page 374.

ARCHITECTURAL SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—The fourth general meeting of the current session of this Association was held on the 29th ult. at the Exchange Buildings, New-street, the head-quarters of the Association. Mr. William Henman presided. Mr. C. Nicol was elected a member of the Association, and Mr. Herbert Martin and Mr. J. E. Blaine were nominated, the first as a member, and the latter as an associate. The Chairman then called upon Mr. Horace Appelbee to read his paper entitled the "Conduct of Architectural Competitions." Mr. Appelbee in the course of his paper said that in his view many competitors of late had not received the consideration they were entitled to, as competitions cost them as a body much more than the successful man would receive in commission for erecting the building. In order that a competition might be satisfactory to every one concerned it would be necessary in his opinion (1) For the accommodation required to be very definitely scheduled. (2) That no unnecessary restrictions should be made as to where that accommodation should be placed. (3) If any restrictions had to be inserted, such as limit to cost, or frontage lines, they should be most strictly adhered to in making the award. (4) And most important of all, that the means adopted for making the selection should be such that both promoters and competitors shall be convinced of its justice, and therefore willing to abide by it, and that the promoters shall see that it is not to their interest to go contrary to it. To obtain this end a committee or jury was suggested, and its constitution and advantages over the single assessor discussed. (5) For the remuneration offered both for the competition drawing and services rendered if the buildings were erected to be such as architects usually receive. And lastly, to obtain more publicity towards the close with a view to preventing bogus competitions. Mr. Appelbee illustrated these points by some recent examples.

ARCHITECTURAL SECTION, GLASGOW PHILOSOPHICAL SOCIETY.—The fortnightly meeting of this section of the Glasgow Philosophical Society was held in the rooms, 207, Bath-street, on the 2nd inst., Mr. T. L. Watson, the President, in the chair. A paper was read by Mr. James H. Craigie, the Alexander Thomson travelling student of 1893, entitled "My Student Tour." The paper was a brief description of the tour made in fulfilment of the conditions attached to the studentship, and during the course of it reference was made to the Trocadéro in Paris as an important factor in architectural education. "The feature of this grand institution," said the lecturer, "is the magnificent collection of architectural casts, some of giant proportions, which illustrate almost every phase of French architecture. This attempt to portray the country's architectural history is a most commendable one, and one which our own country might follow with advantage to her architectural students. In South Kensington the casts are more of foreign than of native work, and while these have their own value they do not appeal so strongly to the Briton as a representative collection of good British work would, especially when placed in chronological order." The lecturer paid a tribute to the Italian Government for placing at the disposal of any art student, free of charge, all Government galleries, museums, and monuments in the kingdom on his submitting a request to that effect, backed up by either the local Consul's recommendation, a passport, or the Royal Institute of British Architects' travelling-card. Referring to the Vatican, he mentioned the disadvantage British art students are at when they wish to study in any of the places dominated by His Holiness owing to there being no British Ambassador to the Papal Court to give weight to their petition. The petty officialdom which hedges His Holiness also suffers in contrast to Government officials, who are politeness personified. The tour embraced almost all the principal towns of architectural interest in Italy, and occupied six months. The paper was illustrated with a number of limelight views and drawings. At the close a hearty vote of thanks was accorded Mr. Craigie for his paper.



View of the Trinity Almshouses, Mile End-road

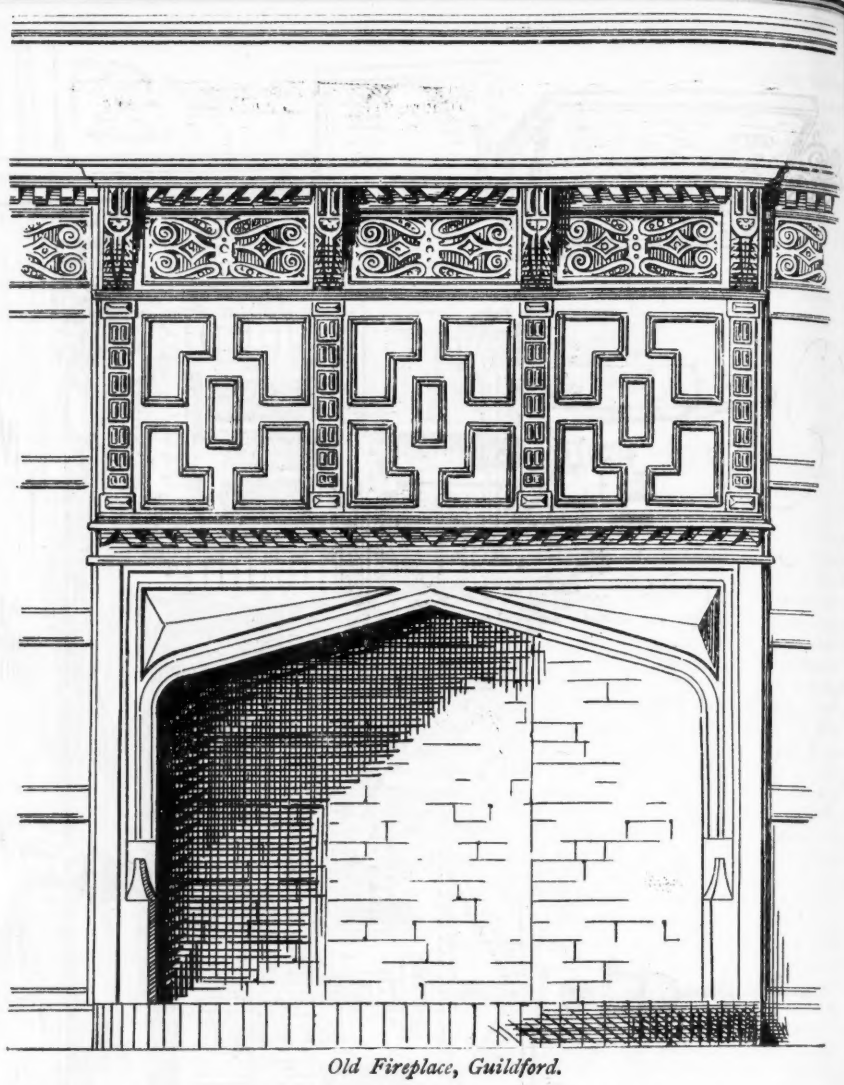
EDINBURGH ARCHITECTURAL ASSOCIATION.—The opening meeting of the Session of the Edinburgh Architectural Association was held on the 27th ult., in the National Galleries on the Mound—Dr. Rowand Anderson, the President, in the chair. The President delivered his inaugural address, part of which we print on another page. Professor Baldwin Brown afterwards submitted and explained a series of limelight views of "The Frescoes by Michelangelo, in the Sistine Chapel at Rome." He explained not only the general features of the decorative scheme of the frescoes, but, treating their subjects in detail, pointed out their great interest and value as works. When, he said in effect, all the facts were kept in view, these frescoes were to be regarded as one of the greatest works of genius the world had seen. On the motion of Sir Henry Littlejohn, Professor Baldwin Brown and the President were cordially thanked. Before the assemblage dispersed they had an opportunity, through the kindness of Mr. James Auldjo Jamieson, W.S., of inspecting a collection of old engravings lately found in an attic room in the Duke of Hamilton's apartments in Holyrood Palace.

THE GLASGOW ARCHITECTURAL ASSOCIATION.—At the ordinary monthly meeting of this Association on Tuesday, Mr. Wm. Tait Conner, Vice-President, in the chair, a paper was read by Mr. Alex. McKee on "Acoustics." The paper first treated of sound and echo, and showed how they were carried. Sound could be reinforced by having air space in walls, ceiling, or floor, also by using wood, glass, or concrete, although plaster was not considered of any help. The Banqueting Hall of the Municipal Buildings was spoken of, the reason of the defect being considered due to the shape of the ceiling, whereas the St. Andrew's Hall, acoustically, was considered very good, the proportion being three width to two height. Good ventilation was an absolute necessity for good hearing; strong air currents should be avoided, as the sound was apt to be diverted. A discussion was opened by Mr. Wm. Fraser, and the usual vote of thanks was passed. An interesting exhibition of cartoons and mosaic work, shown and executed by Mr. Mecenero, London, for the Greek Church, Bayswater, was exhibited in the hall, also about 200 Italian photographs, lent by Mr. Morris, architect, Ayr. The exhibition will be on view for a fortnight.

OLD FIREPLACE, GUILDFORD.

THE fireplace of which an elevation, section, and details are shown in the two annexed engravings, is in the dining-room of the Abbots Hospital, Guildford. The carving of the top panels is in very low relief.

The chair which is introduced in the lower portion of the right-hand drawing, by way of turning the rest of the space to account, is a characteristic and interesting example from among the old chairs some of which are still in use at Hampton Court Palace.



Old Fireplace, Guildford.

Correspondence.

To the Editor of THE BUILDER.

THE LONDON COUNTY COUNCIL ON SOIL-PIPE TRAPPING.

SIR,—I understand that the London County Council has just passed the following by-law:—

"He shall so construct such soil-pipe. . . . that there shall not be any trap in such soil-pipe, or between the soil-pipe and any drain with which it is connected."

Now, if this means that when there is no other special and proper provision made for the ventilation of the drain, then the soil-pipe is to be used for that purpose, such is all right; but in cases where a special ventilating blow-off pipe—say a strong 4-in. iron or lead and iron pipe—is put up to ventilate the drain, why prevent the soil-pipe being disconnected or trapped off from the drain?

In a building with several soil-pipes in it, why should all these soil-pipes be *ordered* to be in full aërial communication with each other, and with the same drain, if the proprietor is willing to go to the extra expense of putting in a special blow-off pipe for the drain, and a disconnecting ventilating-trap for each soil-pipe, with a side fresh-air inlet in a safe position?

Isolation, we are authoritatively told, is one of the best protectives against infection; why, therefore, not carry it out, as far as possible, in our houses as well as in our hospitals?

There is a proverb to the effect that "In a multitude of counsellors there is much wisdom." The experience of the working of this has, however, evolved another proverb, which says that "Too many cooks spoil the broth."

If it is to be the rule that in no building where the London County Council has supervision any soil-pipe can be disconnected from the drain it delivers into, then, in many cases, the pseudo-sanitarians so ruling would be anything but good sanitary cooks. W. P. BUCHAN.

*** The By-law referred to is not as recent as Mr. Buchan supposes. It was passed by the London County Council and allowed by the Local Government Board in June 1893. It appears to us to be a very doubtful measure, and that the County Council has unnecessarily taken on itself to legalise and to demand a principle of construction in regard to which sanitary experts are still much divided in opinion, and the desirability of which is seriously open to question.—ED.

THE TRINITY CORPORATION OF DEPTFORD-LE-STROUD.

SIR,—The demolition of the beautiful almshouses in the Mile End-road would be a fit sequence to a similar act of vandalism perpetrated by this ancient Corporation at their headquarters less than a quarter of a century back, for which that economic reformer, the late Joseph Hume, was credited as the pioneer.

What have we at Deptford in exchange for equally interesting memorials of the beneficent intentions of our forefathers, but the most squalid and neglected area of the most depressing portion of this ancient and once important town and naval depôt, wide streets, compelled so to be by statute, named (ironically?) after "Berthon" and other well-known officials of this venerable Brotherhood; lined by two-storied cottages the very acme of jerry building; which, after an existence of some fifteen years, are now in a state of collapse and premature decay, the back additions parting company with the main buildings, window-arches falling out, and the "mud-mortar," innocent of silica, in the same state as when plastered into the joints by the precious bricklayers of modern times, and which is easily even now removable with a penknife from the joints. The basements, founded on the bastard clay overlying the gravel substratum, down to which the 14-in. walls of their worthy predecessors were carried in the olden days, show by their rotten floors and humid walls the insanitary condition of these successors to the early solidly-built structures erected for charitable purposes.

The Trinity Corporation, as the freeholders, presumably enjoy the ground-rents of these delectable residences. J. B. REDMAN.

SHOREDITCH FREE LIBRARY AND BATHS COMPETITION.

SIR,—The result of this competition, which has just been announced, appears to be very unsatisfactory.

In the conditions it was distinctly stated that three premiums would be given for the library and three for the baths, yet the assessor gives the six premiums to three competitors.

One could understand the first premium in each case being awarded to the same competitor, for obvious reasons; but it seems incomprehensible that out of thirty-five competitors, some of whom are well-known and successful architects, there should not have been others who are entitled to a share in the four premiums given to the competitors placed second and third. "DUBIOUS."

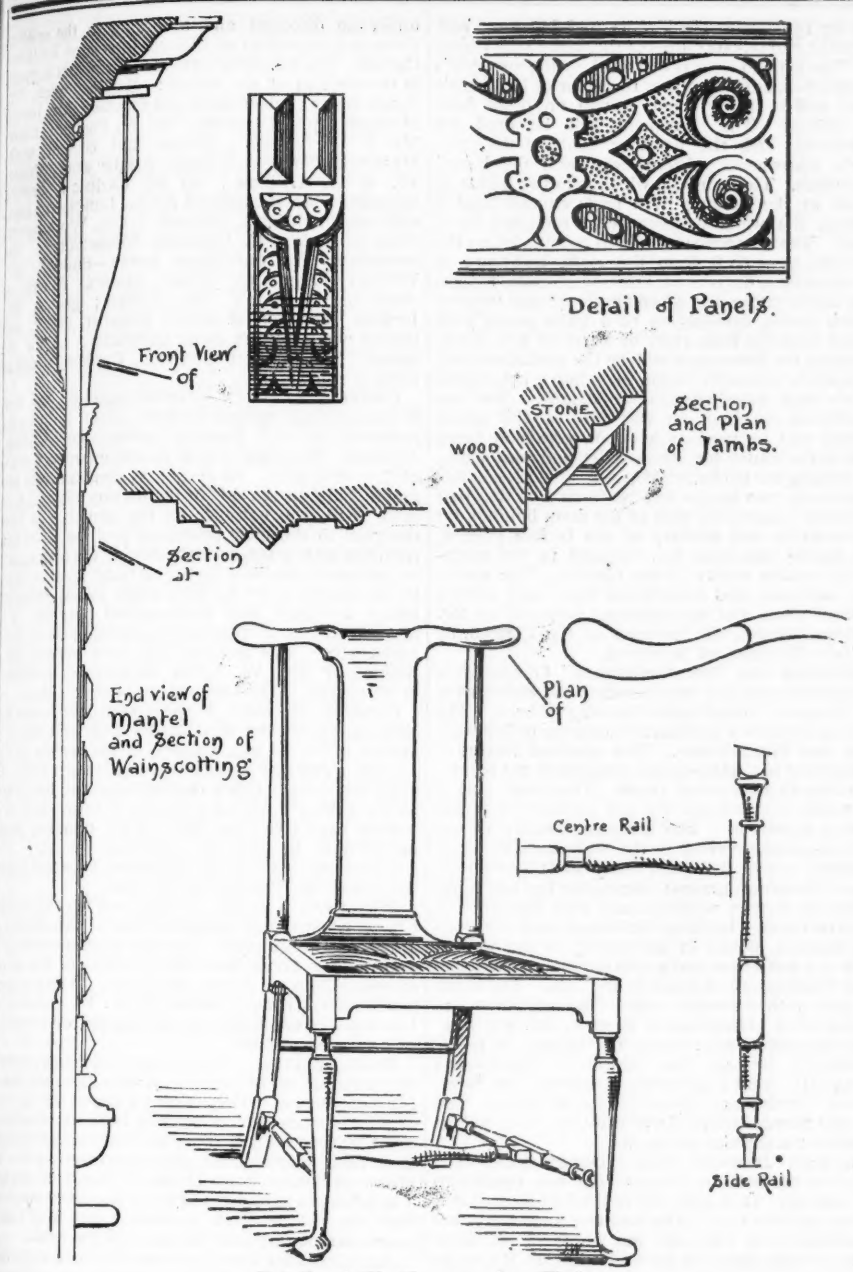
The Student's Column.

METALS USED IN BUILDING.—XXIII.

STRENGTH.

THE strength of metals used in construction is a very unsatisfactory subject to deal with on account of the absolute impossibility of arriving at data other than of the most approximate character. So much depends in the first place on the purity of the ores, their preparation, smelting, and subsequent manufacture, that in quoting strength one ought always to refer to the general character of the metals. It is true that for commercial purposes a certain classification is adopted, and that in a general way a designation based accordingly imparts a fair idea of the broad characteristics of the substance, and that the strength of the substance may therefore be quoted as referring to something of a specific nature, but that is liable to be seriously misunderstood in very many instances. It is of no use to say that the strength of a lead pipe of a certain thickness and diameter is so and so, and cast-iron is so and so. We must know more respecting the composition of the lead and cast-iron, and further, the results obtained should be comparative. Average strength is interesting from a general standpoint, as imparting an idea of the quality of strength of one metal as compared with another, but averages should not be permitted to rank very

SHOREDITCH FREE LIBRARY AND



Details of Fireplace; and a Chair.

high for working purposes. It must be borne in mind that the strength of a column or girder is only that of the weaker parts, and that, in most cases of failure, carelessness of manufacture has been found to be mainly responsible.

The strength of several metals used in construction is liable to vary after the structure has been erected, and especially if machinery in motion, with consequent vibration, is to be employed therein. The whole structure of the metal in certain situations in such a building is liable to molecular change, and the metal deteriorates accordingly. The strength of a girder is frequently much less after it has been placed in position a few years, and that through no cause resulting from atmospheric decay. The latter, naturally, affects strength, but due warning is given long prior to collapse. Homogeneity of composition is perhaps the best safeguard against atmospheric influences; where, as in steel, graphitic flakes are liable to occur in patches and "strings," local decomposition sets up in such places, and weakening results. From the foregoing observations it will be gathered that frequent tests on girders and columns used in building and engineering work are indispensable, though even that cannot ensure freedom from collapse under special circumstances.

We need not discuss the various means and appliances adopted in testing the strength of metals; the student who desires information on that head could not do better than consult Professor Unwin's "Testing of Materials of Construction," published in 1888, together with recent volumes of "Minutes of Proceedings of the Institution of Civil Engineers."

Speaking generally in regard to cast-iron, the carbon present is usually credited with modifying the physical attributes of the metal; the greyer kinds of iron contain most graphitic scales and are weaker, more fusible and softer than whiter iron which contains most combined carbon. Ferro-silicon (a cast-iron with about 10 per cent. of silicon) is mixed with other cast-iron to render it stronger and more useful for foundry purposes. Professor Unwin states (*Op. cit.*, p. 262), that the softest iron used in the foundry has about ·15 per cent. of combined carbon. With 1 per cent, the transverse strength is greatest; with more, the crushing strength increases, but the tenacity and transverse strength diminish. The amount of graphitic carbon has less influence. The silicon, when it does not exceed 3½ per cent., appears to be advantageous in securing a soft, grey, strong iron. Re-melting cast-iron improves its strength, but, if repeated too long, the tensile and transverse strength suffer, though the crushing strength and hardness increase. Mr. Turner from an examination of all existing data made an attempt (*cf.* "Trans. Iron and Steel Inst., 1885") to determine the best composition of cast-iron to obtain certain definite qualities, from which Professor Unwin has compiled the following table:—

	Combined Carbon.	Graphitic Carbon.	Silicon.
Greatest softness.....	·15	3·1	2·5
" hardness	—	—	under ·8
" general strength..	·50	2·8	1·42
" stiffness	—	—	1·0
" tensile strength ..	—	—	1·8
" crushing strength.	over 1·0	under 2·6	about ·8

Experiments have been made to demonstrate that in small castings the strength varies materially with the size, the smaller castings being the stronger. Hodgkinson found that bars of cruciform section were about 1 per cent. stronger than bars with circular or rectangular sections of the same area. The tensile strength of cast-iron bars varies from about 4 tons per square inch to 20·5 tons; and the "means" of a very large number of tests varied from 6·8 to 15·3 tons per square inch.

In arriving at the crushing strength of cast-iron the results are not strictly comparative unless pieces of the same shape are used. The crushing resistance is much increased if the height of the piece tested is so decreased that the plane of least resistance to shear cuts the faces at which the pressure is applied. The lowest recorded result of the crushing strength of cast-iron (cylinders) is 19·8 tons per square inch, and the highest obtained after repeated re-meltings—95·9 tons. The shearing strength of cast-iron varies from 3·92 to 5·29 tons per square inch.

In Bessemer steel the strength is increased and the extension diminished by an increase in the percentage of carbon until it reaches 1·2 per cent., when the strength is about 60 tons per square inch. Styffe * gives the following table:—

Table showing the Effect of Carbon on the Strength of Steel.

Material.	Mark.	Percentage of Carbon.	Breaking strength in tons per square inch.
Puddled steel	NP. 1	0·8	49·9
" "	B. 1	0·8	49·5
" "	NP. 2	0·7	37·6
" "	NH. 1	0·7	37·3
" "	NH. 2	0·7	37·4
" "	G. 1	0·7	35·0
" "	P. 1	0·6	32·8
" "	P. 2	0·6	36·7
" "	B. 2	0·55	38·8
" "	B. 3	0·5	31·7
" "	G. 2	0·5	35·0
Iron	B Iron	0·2	21·5

Bauschinger found that for tension, plates of steel 24 in. in length, 2·8 in. in width, and 0·48 in. thick, varied in strength from 28·1 to 52·7 tons per square inch. The lowest result was obtained with the carbon percentage at ·14 and the highest with ·96.

The tensile strength of wrought-iron is increased by repeated piling and rolling, but, according to some authorities, this can be continued too long. Thus, in one series of experiments quoted by Professor Unwin, the tenacity of the iron in its original state was 19·6 tons per square inch, which increased to 27·5 at the sixth working, and then descended to 19·6 tons per square inch at the twelfth working.

If the value of a material for constructive purposes be determined by its tensile strength and ductility, then manganese steel should rank highly in that respect. In a series of tests described by Mr. R. A. Hadfield,† a peculiar combination of high tensile strength is exhibited, sixty to seventy tons per square inch giving higher elongation than had hitherto been recorded of any material. Notwithstanding this, in most cases the halves of the test-bar were afterwards bent double when cold. Results obtained on that metal by Mr. J. F. Barnaby are given in an appendix to Mr. Hadfield's paper quoted. The effects of torsion may be given as follows:—

Torsion Tests of Manganese Steel Wire.

72 complete twists on length of 14 in., before fracture occurred.

68	"	"	"	14 in.,	"
46	"	"	"	8 in.,	not broken.
42	"	"	"	8 in.,	broken.
115	"	"	"	8 in.,	broken.

One-half of the wire was water-quenched, and notwithstanding the severe punishment already borne, was then bent double, cold.

In this connexion, it may be stated that hard-drawn Bessemer wire gives about four twists on 8 in. before breaking, and in its soft state about forty twists; but in the latter state its tensile strength is only about 30 tons against 70 tons per square inch of manganese steel. The best crucible-steel wire gives from twenty-five to thirty-five twists, and when hardened, a tensile strength of 60 up to 150 tons, according to the purpose for which it is required.

Many experiments have been made as to the effect of stress repeatedly applied both to manganese and ordinary steel. The water-quenching process in manganese steel produces a similar effect (though in a more marked degree) to that of annealing ordinary steel. Manganese steel elongates almost uniformly throughout the whole length under stress; in ordinary steel the greater part of the contraction of area generally takes place in the centre of the piece being tested,

* "Iron and Steel," p. 46.

† "Min. Proc. Inst. C.E.," Vol. xciii. (1883), p. 20, *et sqq.*

and in all cases it centralises itself at one particular point, assuming a pear shape, instead of stretching uniformly throughout its length.

OBITUARY.

HERR PRYLINSKI.—We regret to record the death of the Polish architect, Prylinski, who was a prominent member of the profession and an authority on Polish archæology. Among his works we would notice the restoration of the old "Lukiennice," or cloth-market, at Cracow, and his designs for the restoration of Wanel Castle. This design was, however, carried out by another architect, the author receiving a commission of 2,000*l.* The deceased architect, with Messrs. Fellner & Helmer, obtained a first premium in the Cracow Theatre competition. He was fifty-three at the time of his death, and was a pupil of Van-der-Null, of Vienna, and Viollet-le-Duc, of Paris.

MR. THOMAS CUNDY.—The late Mr. Thomas Cundy, who recently died at Brighton, aged seventy-five, was buried at Brompton Cemetery on November 9 last. He was educated at Oxford, and after studying abroad he entered his father's office, who was then surveyor to the estates of the Duke of Westminster in London. He afterwards started in practice on his own account, and shortly afterwards he gained the first prize in a limited competition for the rebuilding of Upper and Lower Grosvenor-gardens and Grosvenor House. After the death of his father he succeeded him as architect and surveyor to the Westminster estates, which position he resigned in 1890. Mr. Cundy was for some years surveyor to the Marquis of Northampton, and also to the estates of Messrs. Broadwood and the Commercial Bank; and, independently of his architectural work, he was largely employed in arbitrations, reports, and valuations. Some of the principal works carried out by Mr. Cundy were:—St. Saviour's, St. Michael's, and the Grosvenor-road Churches, Pimlico; St. Michael's, St. Peter's, and Ebury-square Schools; the Belgrave Mansions, and all the new houses in Upper and Lower Grosvenor-gardens, Grosvenor-place, Grosvenor-crescent, and Wilton-place; most of the new houses in Grosvenor-square, and various blocks of buildings in Oxford-street and on other parts of the Grosvenor and the Pimlico estates. Mr. Cundy was also architect for a large number of houses in and about Kensington, and for Park-place, Henley-on-Thames, and at Taplow, and at Farringdon; Busert Park in Berkshire, and extensive alterations at the Marquess of Conyngham's town-house. He was also a member of the Merchant Taylors, and Master of the Company. Mr. Cundy was a most painstaking, hard-working man, and no detail was too small for his most careful consideration.

GENERAL BUILDING NEWS.

CATHOLIC CHURCH, NORTHAMPTON.—A new Catholic Church is being erected in the Park-road, Northampton. Mr. Leonard Stokes, of Westminster, is the architect, and Mr. Hammond, of Peterborough, the builder.

ADDITIONS, ST. MARK'S CHURCH, REIGATE.—The additions that have been made to this church were dedicated on the 29th ult. The now completed works have been carried out from the designs and under the personal superintendence of Mr. Charles R. Baker-King, of Spring Gardens, S.W. Messrs. Nightingale Bros., of Reigate, have been the general contractors. A reredos in polished alabaster and a carved oak memorial pulpit have been placed in the church. They have both been carried out to the architect's design by Messrs. Harry Hems & Sons, of Exeter, who have made the new chancel-screen as well as the credence table and adjacent double sedilia, all of which are in Bath stone. The altar-table is of English oak. The new pulpit occupies the same site as did the former one, and is six-sided. Its panels have sculptured representations of different scenes in the life of St. Mark, the patron saint, and the reredos has three white marble panels, in which are groups carved in high relief, and representing in the centre the Resurrection.

NEW CHURCH, PLUMSTEAD.—On the 30th ult., the Duchess of Albany laid the foundation-stone of a new church to be dedicated to St. Mark, at Plumstead. The building has been designed by Mr. Richard J. Lovel, of Queen Victoria-street, E.C. There is a large hall on the ground floor capable of seating about six hundred people, besides class-rooms, retiring-rooms, and kitchen. The church, which is on the first floor, is approached by two flights of wide outside steps from a loggia. The exterior will be built of red brick and Portland stone.

DISTRICT COUNCIL OFFICES, BARNES.—The Barnes District Council are now occupying their new offices, which are situated at the east end of High-street, Mortlake, on a site of one and a-half acres, bounded on the north by the River Thames, and on the south by the High-street. The building (originally known as "The Limes"), is a structure of three stories, entered through a portico carried on columns, and the alterations necessary to adapt it to the purposes of Council offices having been completed, it contains on the first floor a Council chamber 37 ft. long by 28 ft. wide, a committee-room, 14 ft. by 15 ft., with cloak-room and lavatory, and the public and private offices of the clerk to the Council. The ground floor is occupied by the surveyor's private office, drawing office, Inspector of Nuisance's office, and a strong room, having fire-proof floor and ceiling, The basement will be used for store-rooms, and the top-floor contains the caretaker's apartments, cistern-room, and the ladies' cloak-room. The staircase, which is in two flights, is lighted at the landing by a large circular-headed window, the window-recess being occupied by a statue. The new fire-station is to be situated on the same site, some 60 ft. from the main building; it will comprise a duty-room, instrument-room, forage-store, and lavatory, and an engine-house and stabling for two horses, opening on to a large paved yard divided from the main road by a pair of 6-ft. gates. Adjoining the fire-station will be the workshops and stores of the Council's depôt, including a messroom, smith's and wheelwright's workshops. The remainder of the land on this side of the offices building will be used as a depôt, provision being made in the future for steam-roller and cart sheds, and stabling for twelve horses. A small dock capable of receiving two barges will be formed on that part of the site lying to the west of the main building for the reception and delivery of the broken granite, flint, paving materials, &c., required in the execution of various works in the district. The alterations, additions, and decorations have been carried out from plans and specifications prepared by Mr. G. Bruce Tomes, the Surveyor of the Council, by Mr. John Bloomer, of Brentford.

PREMISES FOR THE "HERALD," GLASGOW.—An extension has just been made to the buildings of the *Glasgow Herald* and *Evening Times*. The building occupies a position at the corner of Mitchell-street and Mitchell-lane. The principal feature of the building is a water-tower, situated at the corner, and rising to a height of 150 ft. The lower part of this tower is unbroken by any cornices or bands running across it. The principal feature of the Mitchell-street elevation is the main cornice, which is placed above the third story from the street. Above the cornice are two stories, the top one being lighted by dormer windows and roof lights. The whole of the new building has access from one staircase situated almost in the centre, in the well of which is a passenger and goods elevator. The floors of the building are of concrete and iron. The floors are laid with American oak. The architects are Messrs. John Honeyman & Keppie, and the principal contractors are:—Masonry, Messrs. P. & W. Anderson; joinery, Mr. Matthew Henderson; slating, Mr. John Anderson; plastering, Mr. Wm. Forbes; plumbing, Messrs. Fyfe & Allan; and concrete floors, Messrs. Arrol Brothers. Mr. Robert Aitken is the clerk of the works.

CHURCH, BARROW HILL, DERBYSHIRE.—The church of St. Andrew, Barrow Hill, was opened on the 29th ult. It is built of red brick throughout, and roofed with tiles. The furniture and fittings are of wrought-iron and oak, the whole of the latter having been designed by the architect (Mr. Raymond Unwin, of Staveley Works). The building comprises a nave and chancel, with two vestries attached, one of which contains the organ. There is seat accommodation for 300 persons. The church is heated with low-pressure hot water-pipes, and lighted with gas. The contractors were Messrs. Fisher, of Mansfield.

CHURCH, LLWYDCOED, ABERDARE.—The new Church of St. James', at Llwydcoed, was opened on Monday. The church, which is built of brick, stands upon a piece of land on the Merthyr-road. The style of the edifice, which provides seating accommodation for 210 worshippers, is Gothic, and the total cost of the structure is about 1,200*l.* The plans were prepared by Mr. J. E. Halliday, the Diocesan Architect, and the contract for the building was entrusted to Messrs. Williams & Thomas, Cardiff. The pulpit and the seats are of pitch-pine, and the church is warmed by Porrit's patent heating apparatus. All the windows are of cathedral glass. Surmounting the west end there is a bell-turret.

BOARD SCHOOL, CUMWHINTON, CUMBERLAND.—A new school, which has been erected at a total cost of 2,745*l.* by the Wetheral School Board, has just been opened at Cumwhinton. The face-work of the buildings is of Cumwhinton stone in courses, with polished dressings of red Howrigg stone. The roofs are of open timber work in pitch pine, and the wood finishings of the rooms are in yellow pine varnished. The mixed schoolroom is 46 ft. long and 21 ft. 6 in. wide and 16 ft. high to the tie beam of roof, and the room is designed to accommodate ninety-six children. It is lit by large windows at each end and also by windows near the ceiling at the backs of the scholars. Ventilation is secured by air inlets through the walls and air-pump extractors at the ridge, controlled by closing valves. The infants' room is 26 ft. long by 16 ft. 6 in. wide, and contains a gallery and seats for forty-six children, the whole being finished in a corresponding manner to the larger room. There are separate entrances to both rooms, one for boys, and one for girls; and cloak-rooms with lavatories have been provided. The buildings are fitted throughout with hot-water pipes, the furnace house being detached from the school proper. A masters' house, built in corresponding style to the school, has also been erected on the adjoining half-acre of ground. The work has been carried out under the direction and according to the selected plans in competition of Messrs. Johnstone Brothers, Carlisle. The following were the contractors engaged in the erection of the school:—Builders' work, Mr. James Beaty; joiner-work and furniture, Mr. Joseph Hindson; plumber-work, Mr. W. Forster; slater, Mr. C. J. Nanson; plaster and cement work, Messrs. S. Ferguson & Sons; painter work, Messrs. W. & G. Laidlow; all of Carlisle; heating apparatus, Messrs. Seward & Co., Lancaster; gates and railings, Messrs. Raybold & Co., Workington; drain-pipes, &c., C. Lonsdale, Cumwhinton. The contractors for the house were:—Builder, Mr. William Leighton; joiner, Messrs. Martin & Armstrong; painter, Mr. Palmer; grates, &c., Jardine Carruthers & Sons; plumber, slater, and plaster work by the same contractors as for the school. Mr. Robert Ormiston, Carlisle, acted as clerk of the works.

CHURCH, ALNWICK.—On the 30th ult., the Rev. Richard Leitch opened the new church built by the members of St. James's Presbyterian Church, Alnwick. The new church is erected upon the site of the old church. As there is a comparatively new manse built on the side in the portion adjoining the main road, the entrance to the church has been designed in the most prominent position to be seen from the main road, past the side of the manse, and is further emphasised by the carrying up of a tower to the height of 75 ft., with angle turret, traceried belfry windows, and battlemented parapet. The accommodation of the church, including choir, is for about 700. The building has been erected from designs by Mr. W. Lister Newcombe, architect, of Newcastle. The cost has been about 4,000*l.*

CHURCH, RUBERY, WORCESTERSHIRE.—On the 30th ult. the Bishop of Coventry dedicated the new church of St. Chad's, Rubery, in the parish of the Lickey. The new church is a wooden erection. It holds 200 people under ordinary circumstances, but by the taking down of a screen it opens out to a seating capacity of 300, part of the building being intended to be used as a Sunday-school. The architect was Mr. W. J. Hopkins, Worcester, and the builder Mr. Stanley, of Broome.

WESLEYAN CHAPEL, CHARD.—A new Wesleyan Chapel has just been opened at Chard. The buildings are in the Gothic style. Seating accommodation is provided for about 300, and the cost of the whole scheme is between 3,000*l.* and 4,000*l.* The building has been carried out under Mr. F. W. Curwen, of London (the architect), Mr. C. Turner, of Honiton, being the contractor.

BANK, BRISTOL.—Alterations are being carried out to the offices of the Capital and Counties Bank, Limited, Bristol. They occupy a site at the bottom of Clare-street, which extends back to Baldwin-street, and on both of those thoroughfares frontages have been erected from plans prepared by Mr. R. Milverton Drake (now Drake & Pizey), of Bristol. The freestone used for the front has been obtained from the Monks Park quarries. Over the Clare-street entrance are fixed the arms of the bank.

ADDITIONS TO THE CARDIFF FREE LIBRARY.—The news and magazine-room of the new portion of the Cardiff library building was opened recently. In addition to the news and magazine-room, the ladies' reading-room has also been opened. The new reading-room contains about 450 superficial yds. of floor space, and provides for 280 persons reading at one time. The ladies' room provides for forty-three readers. The rooms are warmed by hot-water pipes, low-pressure system, and at night they are lit by electricity, the fittings being after designs by the architect, Mr. Seward, of Cardiff.

FLATS, HAMMERSMITH, W.—A large block of middle-class flats are about to be erected in Bridge-road, Hammersmith, parallel to Hammersmith Bridge, and having a frontage to Bridge-road of 306 ft., to Rutland-road 80 ft., and return front to the river of 50 ft. Each flat will be self-contained, with three bedrooms, bath, hot and cold, water-closet, two reception-rooms, kitchen, scullery, pantries, &c., also tradesmen's lift. The flats fronting the river will be superior and more capacious, and will have grand views of the river, with balconies overlooking same. The accommodation of these flats will be two large lofty reception-rooms, kitchen, pantries, &c., servant's bedroom and water-closet, service-lift, five capacious and well-lighted bedrooms, dressing-room, linen closets, bath, hot and cold, water-closet, &c. All the bedrooms open into an inner hall apart from the reception-rooms, and both entrance and inner halls will be paved with marble mosaic. The cost is estimated at 20,000*l.*, and the work is to be put in hand at once. Messrs. Fryer & Bath are the architects who have prepared the plans, and are retained by the building owners to superintend the work.

ADDITIONS TO CATHOLIC CATHEDRAL, EDINBURGH.—For several years additions have been in progress at St. Mary's Roman Catholic Cathedral, Broughton-street, Edinburgh. After consideration of various plans, it was decided to erect a new chancel with aisles, and a side-chapel and vestries on the site of the former clergy-house at the west end of the Cathedral; and this, together with the erection of a baptistery at the south side of the Broughton-street front of the building, is the part of the scheme of reconstruction which is now approaching completion. The sanctuary and high altar have always been situated at the west-end of the church, and in con-

nexion with the alterations the west gable has been taken down and rebuilt with one large central arch for the chancel, and two smaller side arches for the chancel aisles. The new chancel is about 50 ft. in length by 26 ft. in width, with a height to the ceiling of 40 ft., the aisles being about 10 ft. wide. The new vestries and side chapel are situated between the north aisle and Chapel-lane. The additions have been designed in the Gothic style. The new chancel has on each side an arcade of three bays, with moulded stone piers and arches, the west-end being a semi-octagonal apse, and the whole is lit by nine large traceried windows in the clearstory. The roof is open timbered, of hammer beam construction, with struts springing from carved stone corbels. The spandrels between the roof timbers are filled with tracery. The ceiling is boarded, and the woodwork is stained and varnished, and relieved by a few lines of colour. The floor is to be of marble mosaic. The carved high altar, with its reredos, together with the carved oak archbishop's throne, canons' stalls, and traceried screens, have been fitted up again in the new chancel. Gifts of stained glass for several of the windows have been made, and these are in course of manufacture; but, in the meantime, all the windows have been glazed with tinted cathedral glass. The space in the nave formerly occupied by the sanctuary has been furnished with chairs, increasing the accommodation of the church by about 250 sittings. The choir and organ-gallery over the entrance door at the east end of the Cathedral, the front part of which was very low, has been wholly rebuilt, and the organ placed to one side of the church, thus opening up the large central east window which it formerly concealed. A hydraulic blowing apparatus has also been provided for the organ. The baptistery next Broughton-street is not yet completed. It is to be octagonal in plan, with buttresses at the angles, and three-light traceried windows in the sides, and will have a cornice and parapet carried round it, and a high-pitched roof. The floor is to be of marble mosaic. The walls and ceilings are to be plastered, the latter being panelled with moulded ribs. A large heating chamber is provided below the baptistery. The work is being carried out from the designs of Messrs. Buchanan & Bennett.

STAINED GLASS AND DECORATION.

MEMORIAL WINDOW, REDDITCH.—On the 29th ult. a stained-glass window in St. George's Church, Redditch, to the memory of the late Rev. G. F. Fessey, was dedicated. The window consists of three lights, and represents the "Ascension." It is the work of Messrs. W. Pearce, Limited, Birmingham.

ALTAR, MAWNAN CHURCH, CORNWALL.—The parish church at Mawnan has just received a new altar for the sanctuary. It is about 7½ ft. long, and the lower parts are of oak, whilst the actual slab is of grey Cornish granite 4¾ in. thick. This has the five usual consecration crosses cut upon its upper face. The base is surrounded by a moulded plinth, and the front is divided by three recessed panels. The backs of the panels are diapered. The super altar projects about 10 in. The altar has been made by Messrs. Harry Hems & Sons, of Exeter.

WINDOW, ANSFORD PARISH CHURCH, SOMERSETSHIRE.—A new stained-glass window, erected in memory of the late Bishop of the Diocese, has just been unveiled at Ansford Parish Church. The window was supplied by Mr. Drake, of Exeter. It has two lights, in one of which is a figure of St. Andrew, the patron saint of the church and of the cathedral church of the diocese. The other light contains a portrait of Bishop Ken.

FOREIGN AND COLONIAL.

FRANCE.—The Minister of Fine-Arts has jus ordered the busts of Marshal MacMahon and Marshal Canrobert for the Ecole Militaire of Saint Cyr.——M. Ruprich Robert *fils*, with the assistance of M. Daumet, has been given the work of restoring the Château d'Amboise, which has just been bought by the Duc d'Aumale. The expense of the restoration is estimated at 1,500,000 francs.——The Société d'Emulation des Côtes du Nord has taken the initiative in a measure which, if it is generally carried out in different parts of France, would be of great service in the cause of archæology. It has asked everyone who will do so to send a list of Druidic monuments, tumuli, dolmens, covered ways, menhirs, cromlechs, &c., indicating how these monuments should be described, measured, orientated and localised.——The work of erecting a monument in memory of the sculptor Pierre Puget, has just been begun at Marseilles. The work will cost about 100,000 francs.——A monument has just been inaugurated at Beaune la Rolande by the Society of the Souvenir Français, to the memory of the soldiers killed on the spot in 1871.——The Minister of Public Instruction has just asked Parliament for a grant of 50,000 francs to enable M. and Madame Dieulafoy to continue their archæological researches in Persia, undertaken with so much success a few years ago. According to an agreement between France and Persia, France will have the exclusive monopoly of all excavations on the ground where it is supposed antiquities are to be found.——A new fort is to be erected at Hassi-el-Homeur, in Algeria.——The Musée Carnavalet has just received a curious picture of the Pont Neuf in the seventeenth century, at the time when it was the principal and most frequented place in Paris.——A certain number of new decorative paintings have just been placed in the Hôtel de Ville, amongst them "L' approvisionment des Halles" by M. Lhermitte, the "Joies de la Vie" by M. Roll, the "Apotheose des Lettres" ceiling by M. Jules Lefebvre, a large decorative frieze by M. Henri Martin, the "Manifestations à la statue de Strasbourg" by M. Adolphe Binet, which is placed in the salon of the Siège de Paris.——The administration proposes to the Municipal Council that M. Bartholomé's monument "Aux Morts" should be installed in Père la Chaise. It will be placed in the central part, under the chapel, and will form a façade to the vault belonging the Ville de Paris. The expense of installation is estimated at 67,000 francs.

AUSTRIA.—Hungary is to have a new Inspector of Arts, and the Government will probably elect M. Michael Munkacsy to this office.——The special commission on the regulation of the River Danube has lately had a meeting, under the presidency of the Prime Minister, Count Badeni, in which it has been practically determined to transform the old Danube Canal, which runs through Vienna, into a winter river harbour. The proposals of Baurath Otto Wagner as to the architectural rendering of the locks and bridges have been approved of. The so-called "Iron Gate" of the Danube is to be opened with much ceremony next year, as the works will then have practically been completed. It is expected that the Emperor of Austria and the Kings of Roumania and Servia will attend the ceremony. ——We have referred to the proposal to open a National Industrial Exhibition at Vienna, on similar lines to that which will be opened next year at Berlin. The preliminary arrangements have now been apparently completed, and a date fixed for the opening in 1898. The Vienna arts and crafts societies will probably be most extensively represented in the galleries.——Another new theatre is to be erected in Vienna; its name will be the "Franz Joseph Theatre," and its site will be in one of the principal suburbs. This will be the third suburban theatre at Vienna.——Owing to the damage caused at certain seasons to the lowest parts of the city by the flooding of the Danube, the municipality have now ordered the careful examination of all buildings affected, prior to enforcing preventive measures.——A very excellent map of "Greater Vienna" has just been published. Herr Hartleben is the editor, and has been able to most clearly show the different kinds of property, and all the municipal arrangements, tram-lines, etc, in the small scale of 1 to 20,000.——Great strides are being made in facilitating the connexion between London and Vienna. The Ostend express, which leaves Ostend on Tuesdays at four in the afternoon, reaches Vienna at half-past four on the following day (Wednesday).——Some of the principal thoroughfares of Vienna are now to be lighted by electricity, and temporary lights are being put up on the "Freiung." The International Electricity Company holds the contract.——A large number of old Vienna houses are now in the hands of the housebreaker to make room for the new Metropolitan Railway, and a number of historical associations will disappear with them. The *Freie Presse* of the 21st ult. publishes an excellent historical sketch of some of the buildings, from which we see that a number of the houses date back as far as 1425 and 1500. One of the buildings, the so-called Casa Piccola House, which has been demolished, was used in 1809 for Napoleon's Council of War. It is very easy to follow the history of buildings in Vienna, owing to the elaborate notes always made in the official conveyancing books.——A large forage warehouse has been completed for the court offices at Vienna, which, having been equipped with all modern improvements and appliances, will be found an interesting building. ——A competition has been opened at Vienna for a scheme of municipal electrical tramways.——Dr. Friebeis, the imperial commissioner, who takes the place of the defunct city council, has officially stated that decisions must almost immediately be given as to the extension of the Vienna water supply, the system of electric railways, and the municipalisation of the gas works.——Whilst the electric-light is being provisionally introduced for the illumination of some of the main thoroughfares at Vienna, experiments are also being made with improved gas-burners in some of the streets, notably, the Herrengasse and St. Michael's-place. Incandescent lights (the Auer patent) are being tried here, and good results are being obtained. The gas supply of Vienna is in the hands of an English company—the Continental Gas Association—whose concession, we understand, however, soon expires, when there will probably be a municipalisation of the service. The company has, we believe, had the monopoly since 1843. Previous to this, there were some small gas works at Vienna, whose interests were, however, bought up.——We regret to announce the death of the "Court Plasterer and Modeller," Herr Detoma, at the age of seventy-five. Herr Detoma, an Italian by birth, is responsible for much of the excellent plaster decoration, which is such an important feature in the Opera House, the new museum, and other modern public buildings in Vienna. The first important piece of work at Vienna by the deceased was the ceiling of the Royal Exchange. He was constantly working under Hansen, Ferstel, Hasenauer, and other notable architects, and participated in the decoration of the Bavarian castles of Louis II.

MISCELLANEOUS.

THE METROPOLITAN CATTLE MARKET.—The Corporation of London will apply to Parliament in the ensuing session for leave to bring in a Bill for altering, and, so far as may be found expedient, repealing the several Acts now in force which relate to the Market at Islington. This measure provides for a transfer by them of certain roads connected with the Market Estate and property of the Corporation to the vestries of St. Pancras and St. Mary, Islington, or to some other highway authority or public body, and imposes on such public body the obligation of maintaining the same; for the removal of any of the existing gates and bars, and their re-erection elsewhere, and the erection of new ones, within the estate; also for empowering the Corporation on certain days and at certain times, as they may deem fit, to set apart spaces (on the estate) for the temporary use of vendors of goods and miscellaneous commodities, or other like purposes, and to levy tolls, rates, and charges in respect of the goods brought into the market, or for the use of the spaces so allotted to their sale.

A NEW SET OF CLOCK CHIMES.—A large new clock has just been erected in the parish church, at Freshwater, Isle of Wight, by Messrs. John Smith & Sons, Derby, which has a large dial, strikes the hours, and plays the new "Tennyson" chimes, which were the joint composition of Messrs. Frank & John Smith, partners in the firm. The chimes seem a little uncertain in tonality, but this is perhaps not out of keeping for bell-music; and a new set of chimes is not unwelcome, at all events.

A WARNING AS TO PRETENDED ELECTRICAL WORKMEN.—Mr. Hughes, the Secretary of the Cancer Hospital at Fulham, asks us to call attention to the danger of admitting persons professing to be electric workmen into a building without due knowledge with regard to them. The Committee of the Cancer Hospital recently decided to adopt the electric light; an estimate was accepted and the work commenced, when on a Saturday a man (who had evidently watched the workmen depart) called shortly after one o'clock, stating he had come to meet the foreman and to arrange where the switches were to be fixed. He was taken all over the building by the porter, and eventually got into the nurses' dormitories at the top of the building, found one of the servants there, told her he had come to measure in connexion with the electric lighting, and thus gained access to the bedrooms, whence he took with him three watches, several articles of jewellery, and all the money he could find from four bedrooms. Needless to say, he had nothing whatever to do with the electric lighting of the hospital, but by the careful measurements which he took and the marks which he put on the walls to show where the switches were to be, he effectually gulled the officials.

CONFERENCE ON LIGHT RAILWAYS.—Two meetings were held in London last week at the Westminster Palace Hotel, to discuss the question of light railways. The more important of the two meetings took the form of a conference, under the chairmanship of Sir Albert Rollit, which met on Thursday last week. The deep and increasing distress among British agriculturists, and the promotion of schemes for extending and cheapening the means of communication as palliatives of that distress were discussed. From all sides it was urged that Government co-operation, either by guarantee of interest or temporary financial support, had become an absolute necessity. The meeting formed itself into a Light Railways Association, and for the purpose of considering and formulating schemes, a committee was nominated on which representatives of County Councils, Chambers of Commerce, the Institution of Civil Engineers, the Surveyors' Institution, members of the two Houses of Parliament, and representatives of Agricultural, Railway, and Tramways Associations were invited to serve. A resolution was passed in favour of urging upon Government to introduce at the earliest possible opportunity in the next Session proposals to facilitate the construction of much-needed light railways in agricultural and sparsely-populated districts in England, Scotland, and Wales. Among the many interesting communications made to the Conference was the statement that, whereas the 20,908 miles of railway in Great Britain had cost 985,000,000*l.* sterling, or at the rate of 47,000*l.* per mile, railways of narrow gauge of 24 in., 18 in., or even 15 in. were doing excellent service in many districts abroad and in the few districts where they were in operation in this country, though the cost might not exceed from 1,000*l.* to 2,000*l.* per mile. Mr. Morrison, M.P., instanced a line laid in the hilly country near Derby by Mr. Hayward, which had been constructed for 1,000*l.* per mile, and upon which recently saloon-carriages containing a large company had been run

round curves in the form of the figure 8 at the rate of twelve miles per hour.

A Minister of Fine Arts.—Apropos of Trinity House, the creation of the office of Minister of the Fine Arts becomes more and more necessary—a Minister who shall have the power, as in France, of deciding when an old building shall be classed as a historic monument; of preventing its owner from destroying it; when it is in need of repair of devoting public funds to its restoration; and, in fact, of generally, by the aid of competent commissioners and assistants, discovering works of art that are worthy to be called national monuments, of restoring and preserving them for future generations.—*Daily Chronicle.*

Industrial Exhibition at Battersea.—On Saturday, last week, the pupils attending the schools in the West Lambeth group of the London School Board held their annual exhibition at the Lavender-hill school, Battersea. Some twenty-five schools took part in the display, and there were just over 300 exhibits in the twenty-five classes for which arrangements had been made. The boys exhibited modelling, wood-turning and carving, fret-work, and drawing. The judges were Messrs. Barten (organiser of manual training to the Board), Wilkinson (art director), and I. Stanley.

Architectural Association. — Discussion Section. — The fourth meeting of the session of the Discussion Section of the Architectural Association was held at 56, Great Marlborough-street, W., on the 4th inst., at 7 p.m., Mr. Herbert A. Satchell in the chair. The paper of the evening was on Architectural Drawing, by Mr. W. Harold Oakley. Mr. Hart, in proposing a vote of thanks to the author, said that he did not think that perspective work should be altogether deputed to a specialist. The building should be not only drawn but designed in perspective. From personal observation he thought that in the old days the artificer frequently had nothing but a perspective sketch to work to. He (Mr. Hart) had seen an old sketch on parchment of the west front of Orvieto Cathedral which was probably all that the workman had in that case. Mr. Greenop objected to the disregard of values frequently shown by the architectural picture-maker. The patch of white sky put in to throw up a bit of the building in a way that would never occur in nature, he strongly objected to. Mr. Smith thought it all very well to pitch into architects for being unable to draw trees and figures, but how many painters could draw architecture? He mentioned one of Doré's paintings of a scriptural subject where the architecture was a hotch-potch of Greek, Roman, German, and other styles. Messrs. Bolton, Harper, Marks, White, Oldham, Hopkins, Pywell, Thomas, Brodie, and Sheridan also spoke, and the Chairman, having made some concluding remarks, put the vote of thanks, which was unanimously carried. Mr. Oakley replied, and the meeting terminated.

Trinity Almshouses.—On the 27th and 28th ult. Mr. G. S. D. Murray, acting on behalf of the Charity Commissioners, opened an inquiry at Trinity House, Tower Hill, into the charitable endowments under the administration of the Corporation of Trinity House. The occasion on which the inquiry was held was the proposal on the part of the Corporation involving the abandonment or demolition of the almshouses in Mile End-road. The Corporation was represented by its Secretary (Mr. C. A. Kent), Mr. Armstrong (solicitor), Mr. Kegwin (Pilotage Committee), and Mr. Leisching (head of the Pensions and Estates Department); Mr. Hopkinson, barrister, appeared on behalf of the National Trust for Places of Historic Interest, the Society for the Protection of Ancient Buildings, the Committee for the Survey and Registration of Old and Interesting buildings in Greater London and Essex, the Kyrle Society, the Metropolitan Public Gardens Association, the Commons Preservation Society, and the Royal Institute of British Architects. In the course of the inquiry, Mr. Kent said the Surveyor to the Corporation ascertained from the Sanitary Inspector of Mile End that he required in respect to twenty-eight houses that new water-closet pans should be put in, that the sink waste and some of the rain-water pipes at the rear of the houses should be disconnected from the drains and gullies inserted for them to discharge over the surface to the sinks, and provisions made for taking water from the mains instead of from the cisterns supplying the water-closets. He (the Surveyor) estimated the cost of this work at about 225*l.*, and he pointed out that when it had been done they might be required within a month to do further work involving a large outlay. There was a further report in which the Surveyor had estimated the approximate cost of such alterations to the fifty-three houses in Bethnal Green parish which were in the same condition as the Mile End ones, at 369*l.* He further stated that should the authorities of Mile End and Bethnal Green require them to take up the old brick drains and put down stone ones, in accordance with the principles ruling at the present time, a further sum of 1,822*l.* would have to be expended, that was 2,416*l.* in all.—Mr. Liesching said that on May 1 he received a notice from the Sanitary Inspector to the effect that he found these houses were in anything but a satisfactory condition, all the drains being improperly trapped, the water-closets, with few exceptions, defective and unsuitable, and insufficiently ventilated; that the water for domestic use was in direct connexion with the water used for flushing the drains; and that there were several other minor matters needing attention. He must therefore request that such steps as were necessary should be taken to have these various matters remedied in order to comply with the requirements of the Sanitary Authority. If it was preferred he would serve the statutory order in the usual way, but he expected that they would prefer to do the work without an order being served. A reply was sent stating that the matter should be looked into. On June 11, the Inspector wrote, putting pressure on the Corporation, and an appointment was made for June 13, when he was acquainted with the proposal of the Corporation to present a scheme to the Charity Commissioners. He then expressed his willingness to hold his hand pending the decision of the Charity Commissioners.—Mr. Kent said that the Corporation had determined in effect the question of the abolition of the almshouses long before the sanitary condition was raised. As far as the actual demand of the Vestry went, 225*l.* would cover the cost, and that included a few houses that were not part of the original structure, known as the Trinity Hospital. It was a fact that good health had prevailed among the inmates, and that there had been no deaths from infectious diseases. — During the inquiry, Mr. Jarvis, Surveyor to the Corporation, said he had been in active practice for fifty years. The houses at Mile End did not conform to the regulations now enforced, and he did not consider they were fit to live in. Cross-examined: He had known the houses for thirty years. He had reported upon them, but had never condemned them. The objections he had just raised were raised for the first time on this occasion.—It was announced that Mr. C. R. Ashbee had received the following telegram from Sir F. Leighton, P.R.A.:—"I much regret inability to attend meeting, feeling as I do deep and most anxious interest in the endeavour to save from destruction a group of buildings of such peculiar artistic charm and individuality, and of so unique a character in London as Trinity House Almshouses."—Mr. F. C. Penrose, President of the Royal Institute of British Architects, said he had examined Trinity Hospital, and had every reason to believe it was from the designs of Sir Christopher Wren. He regarded the building as of the greatest value to the nation from an architectural point of view. Artistically, too, it was of very great value. Everything Sir Christopher Wren touched showed the marks of his genius. He was our greatest architect, and every effort ought to be made to preserve his work. The almshouses were of particular value to students of architecture, because they were apt to run into too florid a style, and such work as this had a chastening effect.—Mr. J. Macvicar Anderson, ex-President of the Royal Institute of British Architects, said he had examined the houses and found that structurally they were in excellent condition, and that all they required was a little work in the way of sanitary improvements. In point of arrangement he considered the houses very admirably suited for the purposes to which they had been put for so many years. The inmates were of robust appearance. Had the buildings been as unhealthy as Mr. Jarvis had told them they were, the inmates would not have been anything like so robust. The cost of the sanitary improvements required would be a trifling one. One great reason for preserving the buildings was that they were a most important factor in the education of young architects. He looked upon them as a unique example of Sir Christopher Wren's work, and he should deplore their demolition as a great loss to architectural students, and, therefore, to the nation. They were certainly unique, but not more unique than beautiful and charming, and there was no reason why they should not be used as almshouses for many generations. Although built in the seventeenth century they compared favourably with many nineteenth century buildings. — Mr. Thackeray Turner, of the Society for the Protection of Ancient Buildings, Mr. Basil Holmes, of the Metropolitan Public Gardens Association, and Mr. C. R. Ashbee also gave evidence against the proposed demolition of the almshouses. Mr. Armstrong, in replying on behalf of the Corporation, said his clients would be exceedingly sorry if buildings which were so beautiful as the professional gentlemen had described should be allowed to be lost to London; and they hoped strongly that if the Charity Commissioners should think it best that the almshouses should be abandoned, some other body or bodies might be found to purchase, at all events, the front portion for the benefit of the neighbourhood for (he thought he was almost justified in adding) a school for young architects. But they submitted that this was not the object of their charity. They looked upon the matter simply from a business point of view, as they felt it was their duty to do, and they submitted themselves entirely to the Charity Commissioners.—In closing the inquiry, the Commissioner said that in the event of the Corporation desiring to retire from their proposals, or in the event of the Commissioners feeling unable to give their sanction to the proposal, he would suggest (without wishing to prejudice the case) that the fourteen houses known as Grigg's Foundation might be taken down so as to give a larger space between some of the others, which would also obviate the difficulty of filling the present number.

Standard of Light for Gas.—At the meeting of the London County Council on Tuesday, the Public Control Committee reported that the representative Committee appointed by the Board of Trade in 1891 to recommend a standard for testing the illuminating power of gas in substitution of the present candle standard, had come to a unanimous decision in favour of the adoption of the 10-candle pentane argand standard, and that they had further recommended, with a view to possible future improvements and requirements, that the gas referees should be authorised to approve and certify, with the consent of the Board of Trade and the Gas Companies, any other flame based upon the above 10-candle standard for use in gas-testing. A recommendation was also made with regard to the method of recording the illuminating power of gas and the rate of consumption to be prescribed for testing purposes. The necessity for a more exact standard of light had been admitted for years, and the Council caused a letter to be addressed to the Board of Trade urging the immediate introduction of a Bill to give effect to the recommendations of the Committee. The Chairman and the Clerk of the Council subsequently had an interview with Sir C. Boyle, the Secretary of the Board of Trade, who desired to ascertain whether the Council would not itself introduce a Bill. It was pointed out to him that there would be a greater probability of success if the Bill were introduced by the Board of Trade with the agreement of all parties, and Sir C. Boyle was understood to intimate that that course would probably be taken. The dissolution of Parliament, however, occurred shortly afterwards, and the Committee were of opinion that, in view of the change of Government, it is desirable the Board of Trade should again be communicated with. They recommended that a further letter be addressed to the Board of Trade, urging the Board to promote in the coming Session a Bill for the purpose of giving effect to the recommendations of the Standards of Light Committee. This was agreed to.

Lists of Tenders for Publication.—We must draw attention to our rule (duly notified in the standing notice at the head of the "Tenders" column) that we cannot accept lists of tenders for publication unless authenticated by the name and address of the sender.

Institution of Civil Engineers' New Building.—On Wednesday last week the managers of sub-contractors and all the foremen engaged on the new building (about forty in all) were entertained at dinner by the Council of the Institution of Civil Engineers, at the Ship Hotel, Charing Cross, on the occasion of the commencement of the Session 1895-96. A capital musical programme was provided, in which Messrs. Court, Cook, Clark, Tyler, and West took part. Owing to the unavoidable absence of Mr. Charles Barry (the architect), the chair was taken by Mr. R. Stephen-Ayling, with Mr. H. Hadfield in the vice-chair.

Liverpool Engineering Society. — On the 27th ult., at the Royal Institution, Colquitt-street, Mr. Arthur Musker read a paper before the members of this Society on "Artificial Paving Slabs." Mr. A. J. Maginnis, President, occupied the chair. At the outset of his remarks Mr. Musker said that the manufacture of artificial paving slabs was one of the great variety of methods of utilising waste products, and in that instance it supplied a suitable material for the equipment of their streets, more particularly flags for the footwalks. When they considered the immense pedestrian traffic there was in the streets of large cities like Liverpool, it would be seen that the question of good flagging was one of very great importance, and therefore it was necessary to have a pavement with a smooth surface, yet having good wear, and giving a secure grip to the feet. A discussion followed the reading of the paper, and at the close a hearty vote of thanks was accorded to Mr. Musker.

Discovery of Corporation "Plate" at Reading.—A discovery was made in Reading the other day by Mr. G. W. Webb, F.R.I.B.A., the chairman of the Survey Committee of the Corporation, who was looking about in the basements of the Municipal buildings for a storage place for some things belonging to the University Extension College, when his curiosity was aroused by the sight of a massive old wooden chest in one of the recesses of the vaults. The box had iron mountings, and was once secured by three substantial locks, but these had been cut away or removed at some time or other. Mr. Webb opened the chest, and extracted some heavy, round objects, which proved to be some pewter circular plates and dishes, black with age. There are three sizes, the largest being two feet in diameter, and the others (dinner plates) in two sizes. On the large dishes the borough arms are cut on the front, and on some of the others the words "Corporation of Reading" run round nearly half the edges, and on others the borough arms are stamped. The plate-marks on the back are exceedingly good, the maker's name, "Ebly," and "made in London," being quite clear. The stamps also include a stag (part of the crest of Berkshire), the rose and crown, Britannia and the lion. There are altogether three or four dozen plates, and their

probable date is 1710. About nine dozen pewter spoons were also found, with "C of R," meaning "Corporation of Reading," and "Corporation" on them. Mr. Webb also brought to light 19½ dozen old Sheffield plate large spoons, inscribed with the borough arms, contained in a small box some eighteen inches square.

ELECTRIC LIGHTING OF RAILWAY CARRIAGES.—There was a demonstration on the 27th ult. on the London, Tilbury, and Southend line of a new system for the electric lighting of railway carriages. The principal features of the system are that each carriage is provided with its own generating plant complete in itself, the revolution of the axle of the carriage driving the dynamo, and thus producing electricity for lighting the carriage while in motion, and also storing sufficient electricity in the accumulator to supply the light when the train is stationary. Hence each carriage is lighted independently. The dynamo is suspended from the under-frame of the carriage in such a manner that although driven by a belt from the axle, none of the vibration of the axle is transmitted, and however the speed of the train may vary, the dynamo always runs at a uniform rate, and consequently always produces the same amount of current. The system is by Messrs. J. Stone & Co.

PANELS AT THE ROYAL EXCHANGE.—For some years past it has been in contemplation by the Gresham Committee to decorate the panels around the ambulatory of the Royal Exchange. It was not, however, until 1890 that the scheme took a practical form. Mr. Deputy Snowden, then Chairman of the Committee, promised to fill in the first panel at his own expense, and Sir Frederic Leighton, P.R.A., simultaneously offered to paint and present another. These gifts were accepted by the Committee, who called in Sir Frederic Leighton, Mr. Calderon, R.A., and Mr. Poynter, R.A., to assist them in arranging a plan for filling in the remaining twenty-two panels, and in selecting the artists and the subjects of the frescoes. The two first panels were unveiled last June—the one painted by Mr. Macbeth, A.R.A., and depicting the opening of the Royal Exchange by the Queen in 1844, and the other by the President of the Royal Academy, entitled "The Phœnicians trading with the Britons." The Corporation acting through the Gresham Committee, of which Mr. Deputy White is now the Chairman, have commissioned Mr. Seymour Lucas, A.R.A., to fill in a panel with a representation of "William the Conqueror Granting a Charter to the Citizens." Mr. Carl Meyer, of New Court, has promised a panel representing "The Offer of the Crown to King Richard III. in Baynard's Castle," to be painted by Mr. Sigismund Goetze; and Sir Samuel Montagu, M.P., has offered a panel portraying "Charles I. Demanding the Five Members at Guildhall," by Mr. Solomon. The Mercers' Company will contribute a panel representing "The Opening of the Royal Exchange by Queen Elizabeth," but they have not yet selected the artist. The subjects of the remaining eighteen panels have also been selected by the Committee and their art advisers.—*Standard*.

LEGAL.

ARBITRATION CASE AT THE COURT OF APPEAL.

BEFORE Lord Esher, Master of the Rolls, and Lords Justices Lopes and Kay. *Re* an arbitration between Ernest Alfred Roome and the Commissioners for Public Baths and Washhouses for St. John, at Hackney.

This was an appeal by the Hackney Baths Commissioners from the order of Mr. Justice Wright at Chambers giving Mr. Roome leave to enforce an award dated September 6, 1895, as though it were a judgment.

The matter arose out of a contract dated February 16, 1894, under which Mr. Roome contracted to build public baths at Hackney for 36,608*l*. The works were suspended in October, 1894, and Mr. Roome made certain claims which were dealt with by arbitration. The award of Mr. Cubitt Nichols, the arbitrator, was given in September last, and he awarded 3,321*l*. to be paid to Mr. Roome in final settlement of all his claims, and gave him the costs of the arbitration and award. The Commissioners claimed to retain the 3,321*l*., or alternatively some part of it, under Clause 22 of their contract, as security for extra cost of completing the baths.

The Master of the Rolls in his judgment said: "I am of opinion the Appeal must be dismissed. No fault is found now with the award as an award, but what is said is the Judge ought not to have made the order. Now what is it that is given by the award? Here is the contractor who has done work for these Commissioners, and it is true to say that the Commissioners took possession of all the work that he had done, and of all his tools and of his plant, and thereupon he complains. What did he complain of? The very first thing to look at is he was ordered to give particulars; they will show what he does complain of. He says 'you took possession of my things, and prevented me fulfilling the contract, but what I complain of is, that it was your fault which prevented me from finishing the work. I cannot say that you were not entitled to take possession because I have not finished the work; but what I complain of is that your man, by gross misconduct, not only with regard to the work which I was carrying on with my workmen, but also by misconduct with the tradesmen who were supplying me with goods, your clerk of the works prevented me from finishing my contract, and you stipulated that you would not interfere with my work, and you ought to pay me damages, inasmuch as they are caused by a breach of contract by you.' Now, if the breach of contract was established, what was the remedy? Damages, and nothing else. What would be these damages? By their breach they may have brought it within the terms of the 22nd Clause of the contract, but it was a breach of the 19th Clause. If that were true, what were his damages? Why, the difference between the condition he would have been in if they had not committed that breach, and the condition in which he was when they had committed that breach. If they had not committed that breach he would have been entitled to the value of the work which he had done, but he could not claim that because he had not finished the work, and he did not give up the work voluntarily, but because they prevented him from doing the work. The moment that was established the value of the work that he had done was part of the damages. But that was not all. He was prevented from earning the rest of his part of the contract, that is, the profit that he would have made if he had carried on the work. Whether the Arbitrator has now given more damages than he ought, is immaterial. There is the award, which is in terms perfectly plain, that the Commissioners were bound to pay 3,321*l*. What for? 'In full satisfaction and discharge of all claims and demands whatsoever of the said Roome against the said Commissioners under the said contract, or in respect of any breach thereof.' The truth is that these damages are all given in respect of the contract and under the contract, but in respect of a breach of it, that breach being that they prevented him from finishing the work. That being so, there is an absolutely good award, a final award, and it is specific, an award that they should pay him the money at once. I cannot say that the Judge was wrong. I am perfectly certain that he was absolutely right in saying upon such an award that there should be no delay. It is an award for damages, and therefore there is no power on their part to retain the money. They are bound to pay it at once. I think the learned Judge was right, and this appeal must be dismissed."

Lord Justices Lopes and Kay concurred, and the appeal was dismissed with costs. Mr. Moulton, Q.C., and Mr. Macmorran appeared for the appellants, the Commissioners; and Mr. Dickens, Q.C., and Mr. R. M. Bray for the respondent, Mr. Roome, the contractor.

BUILDING ON DISUSED BURIAL-GROUNDS.

INTERESTING CASE IN THE CHANCERY DIVISION.

THE case of the Attorney-General *v.* the Trustees of London Parochial Charities and others came before Mr. Justice Stirling, in the Chancery Division, on Friday and Saturday, the 29th and 30th ult., it being an action brought by the Attorney-General at the relation of the Vicar and Churchwardens of the Parish Church of St. Botolph Without, Aldersgate-street, to restrain defendants, the Trustees of London Parochial Charities, from building on certain plots of land situate on the south-side of Little Britain, on the ground that such land formed part of a disused burial-ground, and that building upon it was prohibited by the Disused Burial-Grounds Act of 1884, that Act being passed after the order in Council was issued for closing Metropolitan burial-places, and by which Act and by another Act passed in 1887 the term, "burial-grounds," was defined to include any consecrated or unconsecrated ground which had been set aside for the purposes of interment.

Mr. Graham Hastings Q.C., and Mr. Stokes represented the Attorney-General; and Sir Walter Phillimore, Q.C., Mr. Buckley, Q.C., and Mr. Ralph Nevill the defendant.

Mr. Hastings, in opening the plaintiff's case, said that the first question his Lordship would have to try was, whether the land in question had been used as a burial-ground, and next, whether it was within the terms of the Act of 1884, c. 27, for the prevention of the erection of buildings on burial-grounds after the passing of the Act, and for the purposes of which numerous orders in Council had been made. A further Act was passed in 1887 which suspended certain provisions in other Acts in certain places. St. Botolph Without was an extremely old church; in fact, one of the oldest in point of time. It was referred to in a writ of Edward I. in 1279. In the reign of Richard II. it was incorporated with the Royal Chapel of St. Martin's-le-Grand, and Henry VIII. in 1502 granted it as a free chapel to the Priory and Monastery of St. Peter, Westminster. In 1542, the same King granted the rectory to the Dean and Chapter of Westminster. It appeared that at that time and for some time after, there were no houses on the plot of ground lying between Bull and Mouth-street and Little Britain. The wall, which was marked on the plan, was not then in existence, and the churchyard extended from a place some way below right up to Little Britain. According to Ryter's map, dated 1504, in the British Museum, there were then no buildings upon it, but soon afterwards some houses must have been erected upon it, because in the year 1614 there was a grant by King James I. of "The Church House lying and being in Aldersgate, near the 'Peacock' there at the yearly rent of 3s. 4d., and all the garden at the yearly rent of 3s., and all those three shops adjoining the churchyard on the east at the yearly rent of 2s. And three tenements situate lying and being in the Parish of St. Botolph Without, on the north part of the church and churchyard aforesaid, at the yearly rent of 3s.; and also all that our tenements, with the appurtenances belonging, situate lying and being within the Parish of St. Botolph, in the churchyard, now in the occupation of Simon Kingsland, at the yearly rental of 15d."

His Lordship here remarked that from a document in Latin before him it appeared that three of the houses referred to lay to the north of the churchyard. The fourth was described as "all that tenement lying and being in the said parish within the cemetery."

Mr. Graham Hastings replied that Kingsland's house was the minister's house, now marked 17½, and originally there had been a communication between that house and the church. At a later date the house had been used for the purposes of a ward school, and the doorway was closed up. Since then a sort of casing had been put over the church, and the doorway was visible no longer. In 1884 the Ecclesiastical Commissioners sold 77a, 78, 79, and 80, Little Britain, to the Commissioners of Sewers, and this sale was obviously made by the Commissioners as the representatives of the Dean and Chapter. There was a reference to arbitration, and the sum awarded to be paid for the property was 3,845*l*., and the whole property, including the passage leading to the church-house, was acquired by the Commissioners of Sewers, who subsequently made terms with the builders for the demolition and re-erection of buildings on the site in question. In July of last year the builders began to excavate, but only on a small scale, because they had not got the proper provision for removing the remains. The plot comprised the frontage in Little Britain right up to the wall, and in excavating the workmen came upon enormous quantities of human remains, and it was impossible to suppose that such remains would be found in any other place than a burial-ground. Cartloads of loose bones were found, and bones were also found in connexion with coffins. In one case the coffin was entire, and on being opened the skeleton could be seen inside, and then the whole crumbled to dust. The suggestion made by the defendants was that the general absence of coffins indicated that the place was the site of a plague-pit; but in the learned counsel's opinion, it was not tenable, as he could prove that there was a vestry order issued in 1620 as to the "burial of parishioners old and young," showing the fees charged "for burial with coffins and also the fees for burial without coffins." It was hard to suppose that so vast a plague-pit could have been opened, as the spot in question measured about 114 ft. in length. There could be no doubt that this was part of the old burial-ground, the other, or lower part of which had about 1853 been converted into a public garden. Mr. Hastings then discussed the application of the Act of 1884, in face of which no buildings could be erected unless a faculty for building had been obtained before the passing of the Act of 1884, or unless the churchyard had been sold or disposed of under the authority of an Act of Parliament.

Evidence having been given to show that the passage-way referred to had been paved with old gravestones on which the inscriptions were visible and which recorded the discoveries made during the excavations of the ground,

Sir Walter Phillimore submitted that the ground was never "a place set apart for interment," and had never been used as a graveyard. His contention was that the ground was the site of some old charnel-house, of which there were a number in the early times in connexion with Monasteries. He contended also that the Commissioners of Sewers had authority to deal with the land in question under and by virtue of the City of London Sewers Act of 1851, which Act gave the Commissioners express power to sell.

Mr. Buckley followed on the same side, and Mr. Hastings having replied,

His Lordship intimated that he would reserve his judgment.

MEETINGS.

FRIDAY, DECEMBER 6.

Architectural Association. — Professor Herkomer, A.R.A., on "Scenic Art." 7.30 p.m.

Institution of Junior Engineers.—Paper on "Considerations with Respect to Water, Gas, and Electric Mains, &c., in Connexion with the Formation of Urban Roads and Footways," by Mr. J. Julian. 8 p.m.

SATURDAY, DECEMBER 7.

Sanitary Inspectors' Association (Carpenters' Hall, Throgmorton-avenue, E.C.).—Mr. J. M. Jones on "The Public Health Acts, with Suggestions for their Improvement so as to Secure their More Effective Operation and to Simplify Procedure." 6 p.m.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Rebuilding Infirmary	Bedford Infirmary Com.	80*l.* 40*l.*—80*l.* divided	Dec. 21
*Technical School	Borough of Lowestoft	.....	Jan. 30'96

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Surveyors' Materials	Worcester Corporation	T. Caink	Dec. 7
Rebuilding No. 14 Promenade, Bridlington Quay	R. Holden	J. Earnshaw	Dec. 10
Tenements, Stobeross, &c.	Glasgow Corporation	*Official*	do.
Roadway, Ely Schools	Cardiff Union	do.	do.
Hartshill, or Stoney Stanton Granite	Rugby U.D.C.	do.	do.
Metal Water Mains	Buxton U.D.C.	do.	do.
Lavatory Block of Buildings, Asylum, Wakefield	West Riding C.C.	J. V. Edwards	Dec. 11
Tidal Storage Sewer and Outfall, Aberdovey, Glam.	Towyn U.D.C.	M. W. Davies	do.
School, near Barnsley	Hoyland Nether Sch. Bd.	W. J. Sykes	do.
Enlarging Reservoir, Walverden	Nelson (Lancs.) Corp.	Newton & Son	Dec. 12
Hydrant-Tanks, Paving, &c	Cardiff Corporation	C. H. Priestley	do.
Warehouse, &c. Bridlington Quay	J. Taylor	J. Earnshaw	do.
Additions to Perth Academy, Perth, N.B.	.....	J. & G. Young	do.
Sewer, Newtown, Ireland	Kanturk Union	*Official*	do.
*Erection of Pumping Station	Mansfield Corporation Water Works	G. & F. Hodson	Dec. 13
Road and Wall, Bolton Brow, Sowerby Bridge, Yorks.	.....	C. F. L. Horsfall & Son	Dec. 14
Walling, Fencing, &c. Crescent-view, Bath	.....	E. S. Payton	do.
Workhouse Drainage	Barnsley Union	G. Moxon	Dec. 16
Sewering Back Lily Hill-street	Whitefield (Lancs.) U.D.C.	T. Thorp	do.
Three Shops, House, &c. Queen-street, Morley, Yorks.	.....	J. Sykes	do.
Schools, Penkhull	Stoke-on-Trent Sch. Bd.	R. Scrivener & Sons	do.
Additions, &c. to Schools, Wrexham	Govrs. of Wrexham County Schools	J. Morison & Son	do.
New Streets, Independent Hill, Alfreton	Freehold Land Soc. Ltd.	.....	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Footbridges, Bathampton, near Bath	G. W. Ry. Co.	*Official*	Dec. 17
*Blocks of Dwellings, Bethnal Green	London County Council	do.	do.
Road Metal	Newcastle-on-Tyne Corporation	do.	do.
*Cottages, Lydney	G. W. Ry. Co.	do.	do.
*Electric Lighting Works	Leyton U.D.C.	Prof. H. Robinson	do.
C.I. Pipes and Castings	Bowerby Bridge U.D.C.	Utley & Gray	Dec. 18
Sanitary Pipes (8,000 yds.)	do.	do.	do.
Granite Kerb, &c.	Northampton Corp.	W. I. Brown	do.
Schools and House, near Luton	Houghton Regis Sch. Board	J. Hall Gibbons	do.
Chapel, Milford-street, Salisbury	.....	W. H. Dinsley	do.
Market Hall, &c. Boothferry-road	Goole U.D.C.	W. J. Tennant	do.
*Public Baths and Washhouses, Lambeth	The Commissioners	A. H. Tiltman	Dec. 19
*Making-up Linden-grove	Beckenham U.D.C.	J. A. Angell	do.
*Making-up Princes-road	do.	do.	Dec. 20
*Branch Post Office at Leicester	Com. of H.M. Works	*Official*	do.
Chapel and Lecture Hall, Zion Chapel, Kendal	.....	S. Shaw	do.
*Iron and Stoneware Pipe Sewers	Stevenage U.D.C.	Urban Smith	Dec. 30
*3,270 yards Run of Oak Fencing	County Borough of West Ham	Lewis Angell	do.
Waterworks	Masham (Yorks) U.D.C.	*Official*	Dec. 21
Cottage Homes, Schools, &c. Styal, Cheshire	Chorlton Union	J. B. Broadbent	Jan. 21
Business Premises, High-street and Mulberry-street, Sheffield	Victoria Restaurant Co. Lim.	Holmes & Watson	No date
Nine Cottages, Cwmaman, Aberdare	W. J. Heppell	.....	do.
House, Ben Rhydding, Wales	.....	Fairbank & Wall	do.
Villa, Bangor, Ireland	.....	H. T. Fulton	do.
Residence, Stabling, &c. Harrogate	.....	Milnes & France	do.
Nine Cottages, Wimbledon	.....	A. J. Best	do.
Explosives Magazine, East Rainton, Durham	.....	A. J. Brown & Co.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Borough Surveyor	Borough of Tenby	2*l.* 2*s.* per week	Dec. 9
*Clerk of Works	Poplar Bd. of Works	3*l.* 10*s.* weekly	Dec. 10
*Road Foreman	Hammersmith Vestry	45*s.* weekly	Dec. 11

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv., vi., *&* viii. *Public Appointments, pp.* xviii., xix, *&* xx.

Institution of Junior Engineers.—Visit to the South Metropolitan Gas Company's Works, Old Kent-road (Canal Bridge entrance). 3 p.m.

MONDAY, DECEMBER 9.

Surveyors' Institution.—Mr. F. Punchard on "The Working of the Agricultural Holdings Act, 1883." 8 p.m.

Clerks of Works' Association (Carpenters' Hall).—Paper by Mr. Arthur H. Crump on "Practical Gas-fitting."

Society of Arts (Cantor Lectures).—Mr. W. Worby Beaumont on "Mechanical Road Carriages." II. 8 p.m.

Liverpool Architectural Society.—Paper by Mr. Guy Dawber entitled, "Some Thoughts on Old Furniture." 6.30 p.m.

Leeds and Yorkshire Architectural Society.—Mr. Francis D. Bedford on "Modern Decoration." 8 p.m.

TUESDAY, DECEMBER 10.

Institution of Civil Engineers.—Discussion upon the papers by Messrs. Arnold and Wrightson on "The Physical Properties of Iron and Steel." 8 p.m.

WEDNESDAY, DECEMBER 11.

Sanitary Institute.—Sir Douglas Galton to open a discussion on "The Lessons to be learned from the Experimental Investigations by the State Board of Health of Massachusetts upon the Purification of Sewage." 8 p.m.

Society of Arts.—Adjourned discussion on Mr. Cunynghame's paper on "Locomotive Carriages for Common Roads." 8 p.m.

Liverpool Engineering Society.—Mr. J. H. Parkin on "Some Failures in Sewer-pipes." 8 p.m.

Northern Architectural Association.—Mr Percy Fitzgerald, M.A., on "Adam and his Style of Architecture." 7.30 p.m.

THURSDAY, DECEMBER 12.

Institution of Electrical Engineers.—Annual General Meeting. 8 p.m.

Society of Antiquaries. 8.30 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

20,136.—DOOR-STOPS: *F. Hughes.*—A combined door-holder and stop, which consists of a horizontal arm capable of sliding in a box, and mounted with a stop at one end and a slight projection at the other. When the door and stop come in contact the arm moves along the box and raises a pivotted catch which holds the door in an open position.

21,692.—CREST-TILES: *R. Allen.*—Relates to an improved crest-tile applicable to the edges of flats, such as those over bay windows. A ridge is made round the flat, and the tile is formed with an ordinary flange on one side, and a shortened flange on the other side. The tile may be of terra-cotta and bedded in cement.

24,987.—SELF-CLOSING DOORS, &c.: *W. Whiteley.*—An arrrangement for automatically closing doors, consisting of a weight and rope passing over a pulley. To prevent slamming of the door the weight is fitted as a piston, and slides in a tube attached to the door-frame. The lower end of the tube is fitted with a valve for controlling the admission or emission of air, thus by regulating the escape of the air from beneath the weight, the speed of the descension of the weight is governed.

25,167.—FLUSHING APPARATUS: *L. Mulkay and another.*—In flushing apparatus a downwardly extending pipe, which is enclosed by a bell, and with it forms a syphon, has at its lower end an elbow adapted to always retain sufficient water to act as a seal. The pipe dips into a chamber formed below the bottom of the tank to receive the discharge-pipe, and a tube extends downward from the upper end of the flushing-syphon to near the bottom of the tank, having a tap in the middle which regulates the flush.

25,366.—FIRE-PROOF PARTITIONS: *T. Banks.*—Constructed of open metallic lathing bent into corrugated or angular ridge and furrow form, secured between metal standards and coated on both sides with plaster, which passes through between the lathing and unites both sides together.

4,721.—PAINT BRUSHES: *W. Simpson.*—In the manufacture of paint brushes the handle is secured to the bristles by first securing the latter in the ferrule by grooved clamps, and afterwards driving in the handle by striking a hollow tube which is placed over it.

17,360.—TILED ROOFING LATH: *W. Madens.*—Provides a lath of sheet metal in the form of a flat gutter, with turned up edges, and a hook projection at the upper end on the convex or opposite side.

17,751.—STOVES: *C. Hofmann.*—Relates to a stove having a feed shute at one side with hermetic closure, an inner receptacle for fuel with a lateral space between the outer shell of the stove, and a hot-air chamber above the fuel near the flue. The fuel-receptacle may be closed at the top, so that the gases of combustion pass through the lateral space and round the chamber to the chimney.

17,780.—WINDOW-FASTENER: *J. Peter.*—A fastener which may be also used for doors in which bolts are used, and arranged to be readily withdrawn. A handle is attached to a turning disc, and connecting-rods or arms are used for joining the disc and bolts together. The bolts slide in guides, and are shot or withdrawn with the partial oscillation of the disc.

NEW APPLICATIONS FOR LETTERS PATENT.

NOVEMBER 18.—21,870, F. Hinton and J. Day, Fire-proof Floors.—21,874, W. Wood and others, Sanitary Pottery.—21,875, J. Taaffe, Boundary-wall Metal Rain or Roof Gutter.—21,901, G. Thomson, Artificial Stone, Roofing and other Tiles, and Enamel.—21,902, G. Thomson Method of Treating Stone.

NOVEMBER 19.—21,939, J. Morton, Continuous Kiln for Burning Bricks and Sanitary Pipes, &c.

NOVEMBER 20.—22,053 and 22,054, J. Gordon, Glazing of Brick, Tile, and Other Surfaces.—22,056, J. Martin, Fixing Glazed and Similar Tiles.—22,064, H. Alexander, Cisterns.—22,068, E. Green and J. Lake, Compo. for Preventing Damp Walls, and for Distempering and Decorating Purposes.—22,075, J. Gee, Machine for Forming or Shaping Archways in Plaster, Cement, &c.—22,088, R. Taylor, Mixing Machines for Concrete, &c.—22,102, D. Bryce, Chimney Cans or Cowls.—22,111, J. Barnard and W. McCleary, Window-frame with a Lapping Joint, Weather and Burglar-proof.

NOVEMBER 21.—22,169, G. Hunt and C. Hooper, Ventilators.—22,173, J. Green and W. Oates, Square-top Gully-traps.—22,193, A. Gorse and others, Nails.—22,279, L. Gutman, Adjustable Holdfast for Scaffolding.

NOVEMBER 22.—22,292, C. McCallum and A. Morrison, Fittings for Windows, &c.—22,306, J. Parker, Conical Cap for Chimney-tops and other Flues or Shafts.—22,309, G. Kleine and W. Falkenroth, Cutting Tools for Wood-screws.—22,320, F. Rider and H. Colliver, Spring Hinge.—22,322, H. Pratt, Wood-screws.—22,328, J. Wade, Treatment of Wood intended to be Painted.

NOVEMBER 23.—22,371, R. Wilson and others, Lenses, and Holding Frames of Lenses, Employed as Floorlights, Skylights, &c.—22,415, A. Stephens, Chamber Draught Annihilator, Fresh Warm Air Ventilator, Fog Preventer, and Free Combustion Appliance.—22,434, F. Schoolbred and E. Smith, Block Flooring.

PROVISIONAL SPECIFICATIONS ACCEPTED.

19,106, A. Morrison, Weather-bars or draught-excluders for doors.—19,535, H. Webb and H. Harvey, Fastenings for Doors, Gates, &c.—19,733, J. Tompkins and others, Machines for Grinding Cement, &c.—20,058, H. Cameron, Casement-stay and Fastener.—20,059, A. Moffatt, Automatic-doors for Closing Entrances to Lifts.—20,444, J. Mitchell, Valve or Flap for Sewer-gas Interceptors.—20,515, J. Gabriel, Drain-pipes.—20,592, E. Carter, Picture-frame Cramps.—20,840, O. Steed, jun., Water-taps and Valves for Water-supply.—20,880, J. Cohen and H. Dell, Excluding Draught and Rain.—20,595, W. Tickle, Wood-working Machinery.—21,322, L. Hey, Sliding-Windows or Sashes, &c.—21,330, R. Roberts, Method of, and Apparatus for Glazing the Roofs of Buildings.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

22,632, H. Lake, Fastenings for Doors.—23,76[illegible] J. Rigby, Back Draught to Firegrates.—85, E. Prew, Utilising Heat resulting from Combustion which ascends the Chimneys of Buildings.—1,522, A. Conway, Chimney-pot.—1,558, J. Williams and H. Darrall, Ceiling Roses and similar Electric Fittings.—1,588, F. Whitehouse, Ratchet Braces.—15,606, W. Henderson, Horizontal and Vertical Saws.—18,669, C. Heyworth, Lavatory Wash-basins, &c.—18,828, J. Duncan, Combined Try and Bevel Squares.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

NOVEMBER 13.—By *Crisp & Co.* (on the premises) "Fern Bank," Grove-rd., New Southgate, f., e.r. 40*l.*, 550*l.*

NOVEMBER 19.—By *Jackson & Son* (at Hitchin): "Lower Stondon Farm," Shillington, Beds., 104 a. 2 r. 39 p., f., 2,400*l.*; an enclosure of land, 7 a. 1 r. 4 p., f., 140*l.*

NOVEMBER 25.—By *Weatherall & Green:* No. 180, Drury-lane, area 1,550 ft., f., 1,475*l.*; a range of stabling, Clarendon-rd., Notting Hill, u.t. 27½ yrs., g.r. nil., e.r. 90*l.*, 455*l.*—By *J. W. Kemsley:* 1, 2, 5, and 6, Bosworth's, Romford, u.t. 21½ yrs., g.r. 17*l.*, r. 125*l.*, 1,160*l.*—By *Elliott, Son, & Boyton:* 24, Portland-rd., Norwood, f., r. 65*l.*, 1,100*l.*; i.g.r. 80*l.*, Portland-rd., u.t. 30½ yrs., g.r. 12*l.* (with reversion), 1,220*l.*; f.g.r. 6*l.* 10*s.*, Portland-rd., reversion in 54 yrs., 230*l.*; 270 to 278 (even), High-st., Acton, f., r. 147*l.* 10*s.*, 2,000*l.*—By *Herring, Son, & Daw:* 17, Glasgow-ter., Pimlico, u.t. 29 yrs., g.r. 6*l.*, r. 36*l.*, 200*l.*; 84, Tulse Hill, Brixton, u.t. 55 yrs., g.r. 22*l.*, e.r. 125*l.*, 710*l.*—By *Humbert, Son, & Flint:* 35, Great Portland-st., Oxford-st., u.t. 33 yrs., g.r. 20*l.*, r. 140*l.*, 1,190*l.*—By *F. G. Wheatley* (at Bowes Park): Eight plots of land, Myddelton-rd., &c., Bowes Pk., f., 770*l.*; eight plots of land, Marlborough-rd., &c., f., 49*l.*

NOVEMBER 26.—By *Bradshaw Brown:* 17, 19, and 21, Collingwood-st., Blackfriars, the plant, machinery, and goodwill of a packing-case maker, &c., 1,040*l.*—By *Douglas Young* (at Winchester House): "Beechcroft," Hopton-rd., Streatham, f., r. 160*l.*, 2,500*l.*; f.g.r. 13*l.* 7*s.*, Gleneldon-rd., reversion in 85½ yrs., 355*l.*; 3 to 67, odd, Gleneldon-rd., f., r. 1,366*l.*, 17,940*l.*; f.g.r. 92*l.*, St. Anselm's Church, Madeira-rd., reversion in 86 yrs., 500*l.*; "Cambridge House," Deepdene-rd., f., r. 110*l.*, 1,350*l.*; 135 to 141, odd, 145 and 149, Hopton-rd., f., r. 390*l.*, 4,520*l.*

NOVEMBER 27.—By *G. F. Box & Co.:* 6, Charnock-rd., Clapton, f., e.r. 34*l.*, 400*l.*—By *Douglas Young:* 51 to 56, Litcham-st., Kentish Town, f., r. 175*l.* 12*s.*, 800*l.*; 87, St.

Mary Church-st., Rotherhithe, f., r. 37*l.* 14*s.*, 185; 7 and 8, Adam's-pl., and 13 and 15, Adam's-gardens, f., r. 49*l.* 8*s.*, 180*l.*—By *R. Tidey & Son:* 49, Nascott-st., Watford, Herts., and a plot of land, f., r. 22*l.*, 39*o.*; 10, Denmark-ter., Holloway, f., r. 26*l.*, 250; 35, Wellesley-rd., Haverstock Hill, u.t. 71 yrs, g.r. 6*l.*, 165*l.*; 1, Neal's-yd., Shaftesbury-av., u.t. 46 yrs., g.r. nil, 150*l.*; 30, 42, and 44, King Henry's Walk, Stoke Newington, u.t. 61 yrs., g.r. 15*l.*, r. 108*l.*, 895*l.*—By *Buckland & Sons:* Lg.r. 83½, Langton-rd., Camberwell, u.t. 5½ yrs., g.r. 10*l.*, 310*l.*; l.g.r. 24*l.*, Union-grove, Clapham, u.t. 27 yrs., g.r. 12*l.*, 200*l.*; 94, 95, and 96, Westbourne-st., Chelsea, and 1 to 8, Hart's-yd., u.t. 4 yrs., g.r. 1*l.*, r. 326*l.* 12*s.*, 800*l.*; No. 189, Piccadilly, u.t. 7 yrs., g.r. 49*l.* 7*s.* 6*d.*, r. 200*l.*, 840*l.*; No. 277, Regent-st., profit rent of 144*l.* 19*s.*, u.t. 27 yrs., 1,510*l.*; l.g.r. 107*l.* 6*s.*, Shirland-rd., Paddington, u.t. 67½ yrs., g.r. 2*l.*, 2,370*l.*; i.g.r. 103*l.*, Chippendale-rd., &c., u.t. 67½ yrs., g.r. 2*l.*, 2,230*l.*; i.g.r. 46*l.* 10*s.*, St. John's Wood-ter., St. John's Wood, u.t. 38½ yrs., g.r. 11*l.* 10*s.*, 580*l.*; i.g.r. 80*l.*, Lincoln Villas, Brondesbury, u.t. 63½ yrs., g.r. 2*l.*, 1,700*l.*; f.g.r. 21*l.*, St. Christopher's-pl., Oxford-st.; reversion in 21 yrs., 500*l.*; fee farm-rent of 5*l.* 12*s.*, Billiter-st., City of London, 160*l.*; fee farm-rents of 22*l.* 11*s.* 8*d.*, Southampton-st., Strand, 700*l.*

NOVEMBER 28.—By *H. Holmes & Co.:* 22, Fitzroy-st., Marylebone, u.t. 19 yrs., g.r. 60*l.*, r. 159*l.* 18*s.*, 170*l.*; 109, Charlotte-st., u.t. 33 yrs., g.r. 60*l.*, r. 120*l.*, 75*l.*—By *Fennithar, Ellis, Clark, & Co:* 7 and 8, The Grove, Highgate, and ⅝ of an acre, f., 5,050*l.*; 19, 21, and 23, Rodall-cres., Hampstead, f., r. 186*l.*, 2,800*l.*; 19, Willoughby-rd., f., r. 85*l.*, 1,250*l.*—By *Protheroe & Morris:* York House Model Dwellings, Tenby-rd., Stratford, l., sold privately; 13, Manchester-rd., Notting Hill, u.t. 67 yrs., g.r. 5*l.* 5*s.*, 66*l.*—By *Reynolds & Eason:* 30, 32, 34, and 36, Colchester-rd., Walthamstow, f., r. 75*l.* 8*s.*, 615*l.*; 81 and 83, Pearson-st., Hackney, and 61 and 61a, Weymouth-ter., u.t. 18 yrs., g.r. 11*l.*, r. 161*l.*, 690*l.*; 23a, 24a, 25, and 26, Nursery-st., Tottenham, u.t. 71 yrs., g.r. 12*l.*, 325*l.*—By *H. J. Bliss & Sons:* 140 to 150 (even), Mansford-st., Bethnal Green, u.t. 82 yrs., g.r. 60*l.*, 1,170*l.*; 29 and 30, Claribel-rd., Brixton, u.t. 19 yrs., g.r. 10*l.* 10*s.*, tithe rent, 4*s.*, r. 68*l.*, 280*l.*; 30, Northampton Pk., Canonbury, u.t. 30½ yrs., g.r. 10*l.*, r. 55*l.*, 280*l.*; 57 and 59, Victoria-rd., Stratford, f., r. 52*l.*, 440*l.*—By *Stimson & Sons:* 130, Harris-st., Camberwell, u.t. 49 yrs., g.r. 25*l.*, r. 75*l.*, 210*l.*; 14, 16, and 18, Crescent-rd., Leyton, f., r. 48*l.* 2*s.*, 300*l.*; 28, Vicarage-rd., Tottenham, f., e.r. 26*l.*, 235*l.*; 4, Lindengrove, Peckham, u.t. 52¾ yrs., g.r. 6*l.*, e.r. 50*l.*, 400*l.*; 1 to 4, Dean John Villas, Teddington, f., r. 71*l.* 10*s.*, 720*l.*; 20, South Villas, Camden Town, u.t. 66 yrs., g.r. 9*l.*, e.r. 55*l.*, 400*l.*; i.g.r. 66*l.* 10*s.*, Smyrk's-rd., Old Kent-rd., u.t. 25¾ yrs., g.r. 30*l.*, 460*l.*; 74, Wigmore-st., Marylebone, u.t. 11½ yrs., g.r. 15*l.*, r. 115*l.*, 780*l.*; l.g.r. 65*l.* 10*s.*, Ladywell Pk., Lewisham, u.t. 44 yrs., 1,115*l.*; l.g.r. 132*l.*, Wakefield-st., Bloomsbury, u.t. 23 yrs., g.r. 22*l.*, 1,100*l.*

NOVEMBER 29.—By *Fields & Sons:* 1, 3, 5, 7, 9, and 13, Cremorne-rd., Chelsea, u.t. 87 yrs., g.r. 44*l.* 10*s.*, r. 972*l.*, 1,920*l.*; 4, Haselrigge-rd., Clapham, u.t. 66½ yrs., g.r. 8*l.* 10*s.*, e.r. 65*l.*, 400*l.*; 68, Borough High-st., Southwark, l., r. 180*l.*, 2,650*l.*; 30 to 36 even, Dawlish-st., South Lambert, f., r. 114*l.* 8*s.*, 1,160*l.*—By *J. Hibbard & Sons:* 130, Bramley-rd., Notting Hill, u.t. 66 yrs., g.r. 7*l.*, r. 70*l.*, 180*l.*; 57, Elizabeth-st., Pimlico, u.t. 28 yrs., g.r. 12*l.*, r. 80*l.*, 670*l.*—By *Dolman & Pearce:* 8 and 10, Grafton-rd., Kentish Town, u.t. 25¾ yrs., g.r. 10*l.*, r. 64*l.*, 420*l.*; f.g.r. 59*l.* 14*s.*, Albion-rd., Stoke Newington, reversion in 75 yrs., 1,790*l.*; 20, 22, 24, 28, 30, and 32, Adelaide-rd., Hampstead, u.t. 44 yrs., g.r. 11*l.* 10*s.*, r. 270*l.*, 2,680*l.*; 108, 110, 112, and 114, Adelaide-rd, u.t. 50 yrs., g.r. 54*l.*, r. 280*l.*, 1,750*l.*; "Beaumont Cottage," College-rd., u.t. 47¾ yrs., g.r. 5*l.*, r. 45*l.*, 415*l.*; 164, Stroud Green-rd., Finsbury Park, u.t. 78 yrs., g.r. 8*l.* 8*s.*, r. 45*l.*, 400*l.*—By *Baker & Sons:* Enclosure of building land, Kemble-rd., Forest Hill, 7 a., f., sold privately.

Contractions used in these Lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.		
ton	8/0/0	9/0/0
Teak, E.I. ..load	10/0/0	16/0/0
Secnds, U.S. ft. cu	1/8	1/10
Ad. Canada load	3/0/0	4/5/0
Birch, do.	2/0/0	3/5/0
Elm, do.	2/15/0	5/0/0
Fir, Dantzic, &c.	2/0/0	3/10/0
Oak, do.	2/15/0	4/15/0
Canada	6/5/0	7/15/0
Pine, Canada red	0/0/0	0/0/0
Do. Yellow	2/10/0	4/15/0
Lath, Dantzic, fath	4/10/0	5/10/0
St. Petersburg..	5/0/0	6/10/0
Wainscot, Riga, &c., log	2/15/0	5/0/0
Odessa, crown....	2/15/0	5/0/0
Deals, Finland 1st & 1st std 100	7/0/0	8/10/0
Do. 4th & 3rd ..	7/0/0	8/0/0
Do. Riga	7/0/0	8/0/0
St. Petersburg, 1st yellow	9/10/0	12/0/0
Do. 2nd yellow	7/10/0	9/0/0
Do. white	8/0/0	9/10/0
Swedish	7/0/0	15/10/0
White Sea.....	7/5/0	14/0/0
Canada, Pine 1st	21/0/0	24/0/0
Do. do. 2nd.....	16/0/0	17/0/0
Do. do. 3rd, &c.	8/0/0	10/0/0
Do. Spruce, 1st..	9/0/0	10/10/0
Do. do. 3rd and 2nd	6/10/0	7/10/0
New Brunswick Pine, all kinds	6/0/0	7/0/0
Flooring boards, 1st, 1 in. prep.	5/0/0	20/0/0
Do. 2nd	0/9/6	0/14/6
Do. 3rd	0/6/6	0/11/6
Other qualities—	0/4/6	0/7/6
Cuba, Cuba ..ft.	/4	/4½
Honduras, &c.	/3½	/4½
Mahogany, Cuba	/2½	/6
St. Domingo, cargo av.	/3½	1/0
Mexican do. do.	/3½	/4½
Tobasco do. do.	/4	/6
Honduras do. ..	/4	/6
Cedar, Tuxpay ton	4/0/0	15/0/0
Rosewood, Rio	7/0/0	16/0/0
Do. Bahia	6/0/0	15/0/0
Ebony, St. Domingo	0/0/5	0/1/0

TIMBER *continued*.

Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian....	0/0/3	0/0/7

METALS.

Iron—Pig, in Scotland .....ton	2/7/0½	0/0/0
Bar, Welsh, in London	5/12/6	5/15/0
Do. do. at works in Wales.....	5/2/6	5/5/0
Do. Staffordshire, in London.....	6/0/0	6/10/0
COPPER—British cake and ingot	45/15/0	46/5/0
Best selected ..	46/15/0	47/5/0
Sheets, strong..	53/0/0	0/0/0
Chili bars	42/17/6	43/2/6
YELLOW METAL	0/0/4	9-16 0/0/4⅝
LEAD—Pig		
Spanish ....ton	11/12/6	11/13/9
English com. brands	11/15/0	11/17/6
Sheet, English, 6 lbs. per sq. ft. and upwards ..	12/10/0	12/12/6
Pipe	12/10/0	0/0/0
ZINC—English sheet .....ton	18/5/0	18/10/0
Vieille Montagne	18/15/0	0/0/0
TIN—Straits.....	62/15/0	63/5/0
Australian.....	62/10/0	64/0/0
English Ingots.	67/5/0	67/10/0
Banca	66/0/0	66/5/0
Billiton	65/10/0	65/15/0

OILS.

Linseed .....ton	19/10/0	20/2/6
Cocoanut, Cochin	25/10/0	0/0/0
Do. Ceylon	22/10/0	0/0/0
Palm, Lagos	22/10/0	0/0/0
Rapeseed, English pale	24/5/0	0/0/0
Do. brown	22/15/0	0/0/0
Cottonseed ref. ..	17/0/0	17/10/0
Oleine.....	19/10/0	20/10/0
Lubricating, U.S.	6/0/0	8/6/0
Do. black	4/0/0	6/6/0
TAR—Stockholm barrel	0/19/6	0/0/0
Archangel.....	0/15/0	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender.]

AMERSHAM (Bucks.).—For boring an artesian well, for the U.D. Waterworks Company. Mr. E. A. Sandford Fawcett, C.E., 1, Victoria-street, Westminster:—

George Darlington, Amersham (accepted)
S. F. Baker & Son
I. Henderson & Son
Vivian's Boring and Exploration Co., Ltd.
W. Brown & Son
Dickens & Day
Jno. Thom
T. W. Wood
Duke & Ockenden
C. Isler & Co.
C. Chapman & Sons
T. Tilley & Sons
} Scheduled Prices.

BLABY (Leicestershire).—For erecting glass-houses, Blaby, Leicestershire. Messrs. Goddard & Co., architects, 6, Market-street, Leicester:—

Sendall & Co.	£229 0 0	Hardy, Bruin, & Co., Leicester (accepted)	£186 1 3
Duncan Tucker	199 15 0		

COWPEN (Northumberland).—Accepted at a schedule of prices for the execution of street works, Disraeli-street and four others, for the Urban District Council. Mr. Robert Grieves, surveyor, Commercial Buildings, Waterloo, Blyth:—

Messrs. J. & J. J. Robson, Newcastle-on-Tyne.

EASTLEIGH (Hants.).—For the erection of a Board School at Eastleigh. Messrs. Mitchell, Son, & Gutterage, architects, Southampton:—

	Building.	Plastering.	Total.
Cawte	£7,850	£102 0	£7,952 0
Playfair & Toole	7,700	132 0	7,900 0
Tucker	7,434	41 6	7,475 6
Light	7,297	63 0	7,357 0
Jenkins & Sons	7,265	50 0	7,315 0
Bull	7,197	90 0	7,287 0
Treherne	7,096	109 0	7,205 0
Jukes	7,066	109 0	7,175 0
Longley & Co.	6,969	75 0	7,044 0
Stevens	6,827	140 0	6,967 0
Rashleigh, Lymington (accepted)	6,787	87 0	6,874 0
Chinchen	6,790	68 0	6,858 0

FLEETWOOD (Lancs.).—For the construction of jetty, &c., Knot End, for the Urban District Council. Mr. M. S. Gaulter, Surveyor, Town Hall, Fleetwood. Quantities by Surveyor:—

W. Gradwell & Co.	£2,321 6 0	Vickers & Co, Ltd.	£2,098 0 0
C. Braddock	2,273 10 0	Harman & Langton	2,050 13 6
Bentley & Co.	2,241 0 0	James Watson, Glasgow *	2,018 13 6
J. Kirkbride	2,200 0 0		
Ethridge & Co.	2,140 0 0		

* Accepted.

[Surveyors' estimate, £2,237 4*s.* 4*d.*]

GLEDFIELD (Ross-shire).—For the execution of works at Gledfield House. Messrs. Ross & Macbeth, architects, Queen's Gate Chambers, Inverness:—

Masonry.—Wm. Macpherson, Inverness
Carpentry.—James Nichol & Son, Tain
Slating.—Alex. Mackenzie, Invergordon
Plumbing.—Robt. Black & Son, Inverness
Plastering.—Alex. Munro, Invergordon
Painting.—Wm. Ross & Son, Inverness
Blacksmith Work and Bellhanging.—The Rose-street Foundry Co.
} £2,811 1 5

GUILDFORD.—For additions, &c., to Cromwell House, Commercial-road, for the Urban District Council. Mr. A. J. Sturges, architect, High-street Chambers, Guildford:—

Tribe & Robinson	£793 12	R. Smith	£694 0
P. C. May	793 0	Strudwick	693 10
T. H. Kingerlee	759 0	Higlett & Hammond	669 0
G. H. Tucker	758 0	P. Peters & Son	650 0
A. Johnson	752 0	Stanley Ellis, Guildford*	646 0
Tompsett & Kingham	739 0	W. J. Chinchen	640 0

* Accepted.

LONDON.—For making-up and paving Ryecroft-road, for the Fulham Vestry. Mr. Chas. Botterill, Surveyor, Town Hall, Walham Green, S.W.:—

	Roadway.	York.	Imperial.	Adamant.	Victoria.
	£	£	£	£ s.	£
Imperial Stone Co.	—	—	155	—	—
Victoria Stone Co.	—	—	—	—	160
Adamant Stone Co.	—	—	—	149 2	—
S. Hudson	440	—	—	—	—
G. Wimpey & Co.	410	211	169	153 0	—
Nowell & Robson	445	210	—	—	—
H. J. Greenham	360	—	—	—	—
J. Mears	370	—	—	—	—

LONDON.—Accepted for sanitary work at Old Jewry-chambers, E.C., under the direction of Mr. Parnacott, F.S.I., 93, York-road, Westminster Bridge-road:—

Peacock Bros. £878

LONDON.—For the supply and erection of machinery or the laundry, Boundary-street improvement, for the London County Council:—

Thomas & Taylor	£2,768	J. Fraser & Son	£2,469
W. J. Fraser & Co.	2,697	J. Cochrane	2,400
T. Bradford & Co.	2,636	Murdoch & Cameron	2,165
Pollock & McNab	2,507		

LONDON.—For the docking of the sludge-ship *Barking*, for the London County Council:—

Staines Ironworks and Shipbuilding Co., Ltd.	£325 9	H. Fletcher, Son, & Fearnall	£256 0
Robinson & Dodd	265 0	Mills & Knight	220 0

LONDON.—Accepted for paving, kerbing, &c., Lannoy-road, Eltham, for the Lee District Board of Works. Mr. Robert Findlay, Surveyor:—

John Mowlem & Co., Westminster £316

LONDON.—For the erection of the Bethnal Green coroner's-court, for the London County Council. Mr. T. Blashill, Architect:—

G. Munday & Sons	£3,406	A. E. Symes	£3,218
J. Simpson & Sons	3,295	J. Jarvis & Sons	3,065
J. Shillitoe & Sons	3,290	A. Wallis	2,942

LONDON.—For the erection of a warehouse, constructional ironwork, fireproof floors, &c., at rear of No. 86, Hatton Garden, E.C., for Messrs. Booth & Fox. Mr. Adam Stott, architect, Manchester. No quantities supplied:—

Little & Senecal	£2,175	J. Appleby, Cornwall-road, S.E.*	£2,000
Sobey	2,085		

* Accepted.

LONDON.—For the provision of a school for special instruction in connexion with the Harrow-road School, Paddington, by adapting the present laundry centre for special instruction, and providing also a second room for the same purpose, replacing the laundry centre by the erection of a new room for this purpose above the special school, for the School Board for London. Mr. T. J. Bailey, Architect:—

J. Christie	£1,251 0 0	Vernall, Danes, & Co.	£1,125 0 0
R. A. Yerbury & Sons	1,200 0 0	D. Charteris	1,121 0 0
Cowley & Drake	1,155 0 0	F. G. Minter	1,090 0 0
J. Wilmott & Sons	1,141 5 0	G. Lyford, Uxbridge-road*	1,039 0 0
G. Neal	1,139 13 6		

* Recommended for acceptance by the Works Committee.

LONDON.—For enlargement of the Sussex-road School, Coldharbour-lane, Brixton, by 504 places, for the School Board for London. Mr. T. J. Bailey, Architect:—

J. & M. Patrick	£8,149	Hart Bros.	£6,635
J. Longley & Co.	7,080	W. Downs	6,600
B. E. Nightingale	6,804	G. E. Wallis & Sons	6,570
C. Cox	6,791	Lathey Bros.	6,550
G. Munday & Sons	6,781	Holliday & Greenwood	6,512
J. Marsland	6,657	E. Lawrance & Sons, Wharf-road, N.*	6,476
Holloway Bros.	6,648		

* Recommended by the Works Committee for acceptance.

LONDON.—For erecting manual training and laundry centres in connexion with the Salter's Hill School, West Norwood, and for other work, for the School Board for London. Mr. T. J. Bailey, Architect:—

Lathey Bros.	£2,884 0	Mid-Kent Building & Contracting Works, Ltd.	£2,507 10
Holliday & Greenwood	2,866 0	C. Cox	2,491 0
J. Otway	2,663 0	E. Triggs	2,463 0
Jas. Smith & Sons	2,652 0	D. Charteris, Page-st., Westminster*	2,202 0
A. Black & Son	2,621 0		
W. Akers & Co.	2,533 0		
J. Garrett & Son	2,514 0		

* Recommended for acceptance by the Works Committee.

LONDON.—For removing the lavatory and water-closet in the basement of the Monteith-road School, Old Ford-road, for forming a new lavatory for the teachers, and also for constructing a cloak-room for the girls' department, and for other work, for the School Board for London:—

G. Parker	£287	Atherton & Dolman	£215
W. Gregar & Son	269	J. T. Robey	200
Staines & Son	265	D. Gibb & Co., West India-road*	190
S. Polden	216		
T. White & Son	216		

Recommended for acceptance by the Works Committee.

LONDON.—For constructing new offices for girls' on the roof-playground of the New Castle-street School, Bethnal Green, for rebuilding the boys' offices and reconnecting them with the existing offices for infants, and also for providing a partly new system of drainage for the whole school, for the School Board for London, Mr. T. J. Bailey, Architect:—

W. Gregar & Son	£1,980	Dent & Hellyer	£1,460
H. Knight & Son	1,589	F. G. Minter	1,430
L. Whitehead & Co.	1,567	J. Marsland	1,385
G. Parker	1,550	T. White & Son, Bow*	1,232
G. Newton	1,494		

* Recommended for acceptance by the Works Committee.

LONDON.—For the enlargement of the Plough-road School, Clapham Junction, by 180 places, for the School Board for London. Mr. T. J. Bailey, Architect:—

B. E. Nightingale	£1,944	Holliday & Greenwood	£1,676
Mid-Kent Building and Contracting Works, Ltd.	1,746	Holloway Bros.	1,638
J. Shillitoe & Son	1,725	W. Downs	1,629
Hart Bros.	1,702	Lathey Bros., Battersea*	1,555

* Recommended for acceptance by the Works Committee.

LONDON.—For providing and fixing a complete system of low-pressure hot-water apparatus for warming the new school now being built on the site in Page's-walk, Bermondsey, for the School Board for London. Mr. T. J. Bailey, Architect:—

Rosser & Russell	£688 0	Jones & Attwood, Old Queen-street, Westminster*	£458 0
J. C. & J. S. Ellis, Ltd.	549 10		
Russell & Co.	537 10		
Purcell & Nobbs	472 0		

* Recommended for acceptance by the Works Committee.

LONDON.—For providing additional heating surface to improve the efficiency of the hot-water apparatus at the Ivydale-road School, Nunhead, for the School Board for London:—

J. F. Clarke & Sons	£175 0	Wontner-Smith, Gray & Co.	£123 0
J. Fraser & Sons	169 0	W. G. Cannon & Sons, London-road, S.E.*	98 0
Russell & Co.	159 10		
J. C. & J. S. Ellis, Ltd.	131 17		

* Recommended for acceptance by the Works Committee.

LONDON.—For providing and fixing a complete system of low pressure hot-water apparatus and Trentham boilers for warming the new school in Fircroft-road, Tooting, for the School Board for London. Mr. T. J. Bailey, Architect:—

J. Gibbs & Son	£919	J. F. Clark & Sons	£650
Richardson & Co.	857	J. Wontner-Smith, Gray, & Co.	644
Strode & Co.	757	W. G. Cannon & Sons, London-road, S.E.*	572
Maguire & Son	754		
Duffield & Co.	680		

* Recommended for acceptance by the Works Committee.

LONDON.—For providing new mains and additional heating surface in connexion with the existing system of low-pressure hot-water apparatus, at the Ackmar-road School, Parsons Green, for the School Board for London:—

G. Davis	£155 0	W. G. Cannon & Sons	£86 0
W. J. Fox	139 0	J. F. Clarke & Sons, Moorgate-street*	70 0
Duffield & Co.	130 0		
J. Wontner-Smith, Gray, & Co.	116 10		

* Recommended for acceptance by the Works Committee.

LUTON.—For paving and other works, Upper North-street, for the Town Council. Mr. A. J. L. Evans, Borough Surveyor, Town Hall, Luton:—

Thos. Adams	£340 0	Thos. Free & Sons, Maidenhead*	£298 5
Geo. Kingham	315 10		
Jno. Surfield	309 5		

* Accepted.

MERTHYR TYDFIL.—For the execution of water-works, including a reservoir south of the Brecon Beacons on the Taff Fechan, to be formed by means of a masonry dam, for the Urban District Council. Mr. Geo. F. Deacon, engineer, 32, Victoria-street, Westminster, S.W. :—
Holme & King, Westminster and Liverpool, at schedule of prices.

NORWICH.—For additions to premises, Magdalen and Botolph-street, Norwich, for Mr. Frank Price. Mr. J. W. Howard, architect, Norwich :—

Downing & Son	£869	Tyrrell & Bro. Norwich *	£810
F. Gunton	828	* Accepted.	

[Architect's estimate, £832.]

OSWESTRY.—For the extension of vagrant wards at the Workhouse, Morda, Oswestry, for the Directors and Guardians of the Oswestry Incorporation. Mr. A. Puleston Madoc-Jones, Glentworth, Oswestry. Quantities by parties tendering :—

Thos. Meredith	£459 0 0	D. Davies & E. Jones,	
Pryce & Jones	415 14 3	Upper Church-street,	
W. H. Thomas	369 0 0	Oswestry (accepted)	£347 15 0

RUGELEY (Staffs.).—For the execution of water-supply works, Brereton, for the Lichfield Rural District Council. Mr. W. E. Rogers, surveyor, Rugeley. Quantities by surveyor :—

L. E Sidebottom	£201 5 0	C. J. Nevitt, Stafford *	£82 15 0
W. H. Sprague	96 14 9	* Accepted.	

RUSHDEN (Northants.).—For making roads and laying sewers, &c., Oakley building estate. Mr. G. F. Beasn, surveyor, Corn Exchange, Wellingborough :—

W. T. Hall	£822	W. J. Willmott, Rushden *	£697
George Henson	782	* Accepted.	

ST. LEONARDS-ON-SEA.—For the erection of three shops and dwellings over the same, at 82 and 83, Bohemia-road, for Mr. John Wratten. Mr. William Cooper, architect, 21, Havelock-road, Hastings :—

J. Weatherseed	£1,825	J. Geary	£1,310
W. E. Warman	1,799	Padgham & Hutchinson	1,268
H. E. Cruttenden	1,742	A. H. White, St. Leonards (accepted)	1,188
C. W. Pelling Hurrell	1,398		

ST. LEONARDS-ON-SEA.—For the erection of a convalescent home for railway men, for the committee of the Railway Mission. Mr. F. H. Humphreys, architect, Hastings :—

J. Shillitoe & Son	£5,700	A. H. White	£4,731
J. Potter & Sons	5,602	C. Hughes	4,730
P. Peters & Sons	5,395	Eldridge & Cruttenden	4,719
J. H. Foster	5,211	F. Cruttenden	4 679
J. Lester	5,099	Padgham & Hutchinson	4,452
H. E. Cruttenden	4,965	P. Jenkins, St. Leonards-on-Sea *	4,413
J. Longley & Co.	4,975	* Accepted conditionally.	
D. H. Snow	4,856		

ST. LEONARDS-ON-SEA.—For the erection of a detached house in St. Matthew's Gardens, for Mr. J. Cooke. Mr. William Cooper, architect, 21, Havelock-road, Hastings. Quantities by the architect :—

C. Hughes	£1,785	Padgham & Hutchinson	£1,539
T. Saiter	1,750	A. H. White	1,473
W. E. Warman	1,648	F. G. Hatton	1,415
W. Coussens	1,640	C. W. Pelling Hurrell, St. Leonards (accepted)	1,350
H. E. Cruttenden	1,610	J. Geary	1,329
D. H. Snow	1,600		

SEAFORD (Sussex).—For the erection of cottages n Hindover-road, for Mr. William Lambe. Mr. William Cooper, architect, 21, Havelock-road, Hastings :—

J. Gausden	£2,850	H. E. Cruttenden	£2,300
A. H. White	2,600	Padgham & Hutchinson	2,039
J. H. Berry	2.574	Wilkinson	2 020
C. Marling	2,382	E. Boniface	1,952
F. D. Foord	2,380		

SOUTHAMPTON.—For the execution of private improvement works, Bond-street and two other streets, Northam. Mr. W. B. G. Bennett, Borough Surveyor, Municipal Offices, Southampton :—

W. J. Chinchen	£1,985 0 0	Crook & Batten	£969 7 0
M. Hall	1,765 12 10	F. Osman, Southampton (accepted)	927 0 0
H. W. Bull	995 0 0		
Playfair & Toole	994 10 0		

UPTON PARK.—For the erection of a block of school-buildings to be known as the Harold-road schools, for the West Ham School Board. Messrs. Newman & Jacques, architects. Quantities by Messrs. Curtis & Son :—

W. J. Maddison	£22,165	Stimpson & Co.	£19,960
Reed & Son	19 997	Kirk, Knight, & Co.	19 700
C. G. Hill	19,993	Gregar & Son	18,866
H. Flint	19,987	G. Sharp, Stratford *	18,523

* Accepted subject to the approval of the Education Department.

WINDSOR.—For additions, &c., to Union workhouse, for the Union Guardians. Messrs. Edgington and Summerbell, architects, 17, Park-street, Windsor. Quantities by the architects :—

F. Akery	£2,750 0	Norris & Sons	£2,195 0
Beauchamp & Rowland	2,475 16	J. Deverill	2,175 0
Gibson & Son	2,377 10	Gray	2,154 0
Belch	2,290 0	W. Watson	2,148 0
Pither & Son	2,280 0	G. H. Tucker	2,133 0
E. Bampfylde	2,260 0	G. Simmons, Reading *	2,096 0
A. H. Reavell	2,158 0	Accepted.	

WOLVERHAMPTON. — For additions to school buildings, Dudley-road, for the School Board. Mr. J. H. Fleeming, architect, 102, Darlington-street, Wolverhampton. Quantities by the architect :—

Bradney & Lloyd	£3,140	Gough	£2,892
Ham Bros.	3,060	Jones	2,889
Skett	3 010	Guest & Son	2,800
Harlay & Son	2 992	Cave, Wolverhampton*	2 796
Wilcock & Co.	2,943	Horton	2,698
		* Accepted.	

YORK.—For the supply of the ironwork required in the construction of a weir, Castle Mills Lock, for the Foss Navigation Committee of the York Corporation. Mr. A. Creer, C.E., Guildhall, York :—
Messrs. Barker & Sharp, Peasholme-green, York .. £262 19 8

WOODFORD. — For building a detached villa-residence at Barclay Oval, Woodford, Essex, for Mr. A. Scott. Mr. R. C. Murray, architect, 1, Racquet-court, E C. Quantities by Mr. R. E. Crossland, quantity surveyor, 1, Racquet-court, E.C. :—

Goddard & Son	£1,690	Knight & Son	£1,444
Woodward & Co.	1,549	Somerford & Son	1,439
Harris & Wardrop	1,473		

TO CORRESPONDENTS.

G. C.—W. H. W.—G. & J.—B. & G. (amounts should have been stated).—J. V. (below our limit).—S. & Co. (too late; next week).

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.
We cannot undertake to return rejected communications.
Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.
All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (or 4s. 9d. per quarter), can ensure receiving "The Builder, by *Friday Morning's Post*.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents n any part of the United Kingdom, at the rate of 19s. per annum PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER,' No. 46, Catherine-street W.C.

In a few days (87 plates), price 21s.

"THE BUILDER ALBUM"

OF

ROYAL ACADEMY ARCHITECTURE.

1895.

This set of plates comprises the drawings in the Architectural Room of the Royal Academy Exhibition, which were lent by their authors for illustration in *The Builder*.

LONDON:
Publisher of "The Builder," 46, Catherine-street, W.C.

W. H. Lascelles & Co.,
121, BUNHILL ROW, LONDON, E.C.
Telephone No. 270.
HIGH-CLASS JOINERY,
LASCELLES' CONCRETE
Architects' Designs are carried out with the greatest care.
CONSERVATORIES,
GREENHOUSES,
WOODEN BUILDINGS,
Bank, Office, & Shop Fittings.
CHURCH BENCHES & PULPITS.
ESTIMATES GIVEN ON APPLICATION.

PUBLISHER'S NOTICES.

Registered Telegraphic Address, "THE BUILDER, L...

CHARGES FOR ADVERTISEMENTS.
SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS
Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.
Terms for series of Trade advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c., may be obtained on application to the Publisher.

SITUATIONS WANTED.
FOUR Lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.
PREPAYMENT IS ABSOLUTELY NECESSARY.
*** Stamps *must not* be sent, but all sums should be remitted by Cash in Registered Letter or by Postal Orders, payable to DOUGLAS FOURDRINIER, and addressed to the Publisher of "THE BUILDER," No. 46, Catherine-street, W.C.
Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is not possible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the first page should be in by TWELVE noon on WEDNESDAY.

SPECIAL.—ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS to DISCONTINUE same must reach the Office before 12 o'clock on WEDNESDAY MORNING.
The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be left.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office*, 46, Catherine-street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent together with sufficient stamps to cover the postage.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES, { NINEPENCE EACH. By Post (carefully packed)

THE BATH STONE FIRMS, L...
BATH,
FOR ALL THE PROVED KINDS OF
BATH STONE.
FLUATE, for Hardening, Waterproofing and Preserving Building Materials.

DOULTING STONE.
CHARLES TRASK & SONS,
(THE DOULTING STONE COMPANY),
DOULTING, SHEPTON-MALL...
London Agent:
E. A. WILLIAMS, 16, Craven-st., Strand, W...

HAM HILL STONE.
The attention of Architects is specially invited to the durability and beautiful colour of this material. Quarries well opened. Quick despatch guaranteed. Stonework delivered and fixed complete. Samples and estimates on Address, The Ham Hill Stone Co., Norton, Stoke-under-Ham, Somerset. London Agent: Mr. E. Williams, 16, Craven-st., Strand, W.C. [Ad...

Asphalte.—The Seyssel and Metallic Limmer Asphalte Company (Mr. H. Glenn), Office, Poultry, E.C.—The best and cheapest material for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co. [Ad...

SPRAGUE & CO.'S
INK-PHOTO PROCESS,
4 & 5, East Harding-street,
Fetter-Lane, E.C. [Ad...

QUANTITIES, &c., LITHOGRAPHED accurately and with despatch.
METCHIM & SON, 20, Parliament-st. S...
"QUANTITY SURVEYORS' TABLES,"
For 1856, price 6d. post 7d. In leather 1/- Post 1/1 L...

PILKINGTON & C...
(ESTABLISHED 1838),
MONUMENT CHAMBERS,
KING WILLIAM STREET, LONDON, E.C.
Registered Trade Mark,
Polonceau Asphalt...
PATENT ASPHALTE and FELT ROOFING.
ACID-RESISTING ASPHALTE.
WHITE SILICA PAV...
SEYSSEL ASPHALTE.

1895.

ICES.

EMENTS.

INDS OF

Waterproofing

Materials.

T ONE

SONS,

PANY),

N - MALL

., Strand, W

ONE

s is speci

eautiful col

opened. Q

work deliv

d estimates

, Norton, St

gent: Mr. E

W.C. [A

Metallic L

enn), Office,

pest materia

arehouse flo

nd milk-roo

aces. Asp

Co. [A

CESS,

-street,

E.C. [A

HOGRAPE

spatch.

liament-st.

TABLES,

x/- Post x/x [A

ON&C

),

BERS,

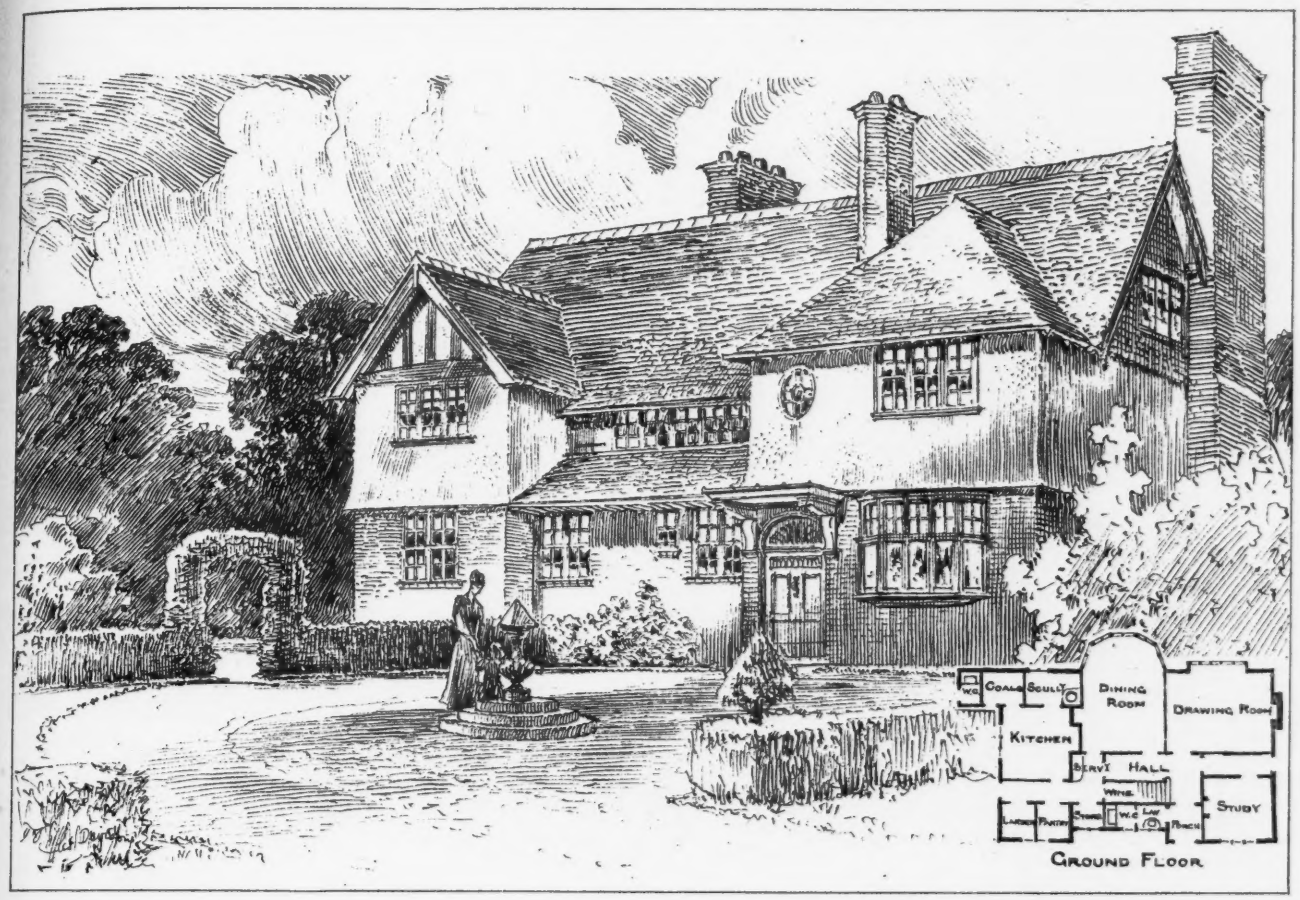
LONDON, E.C

sphalt

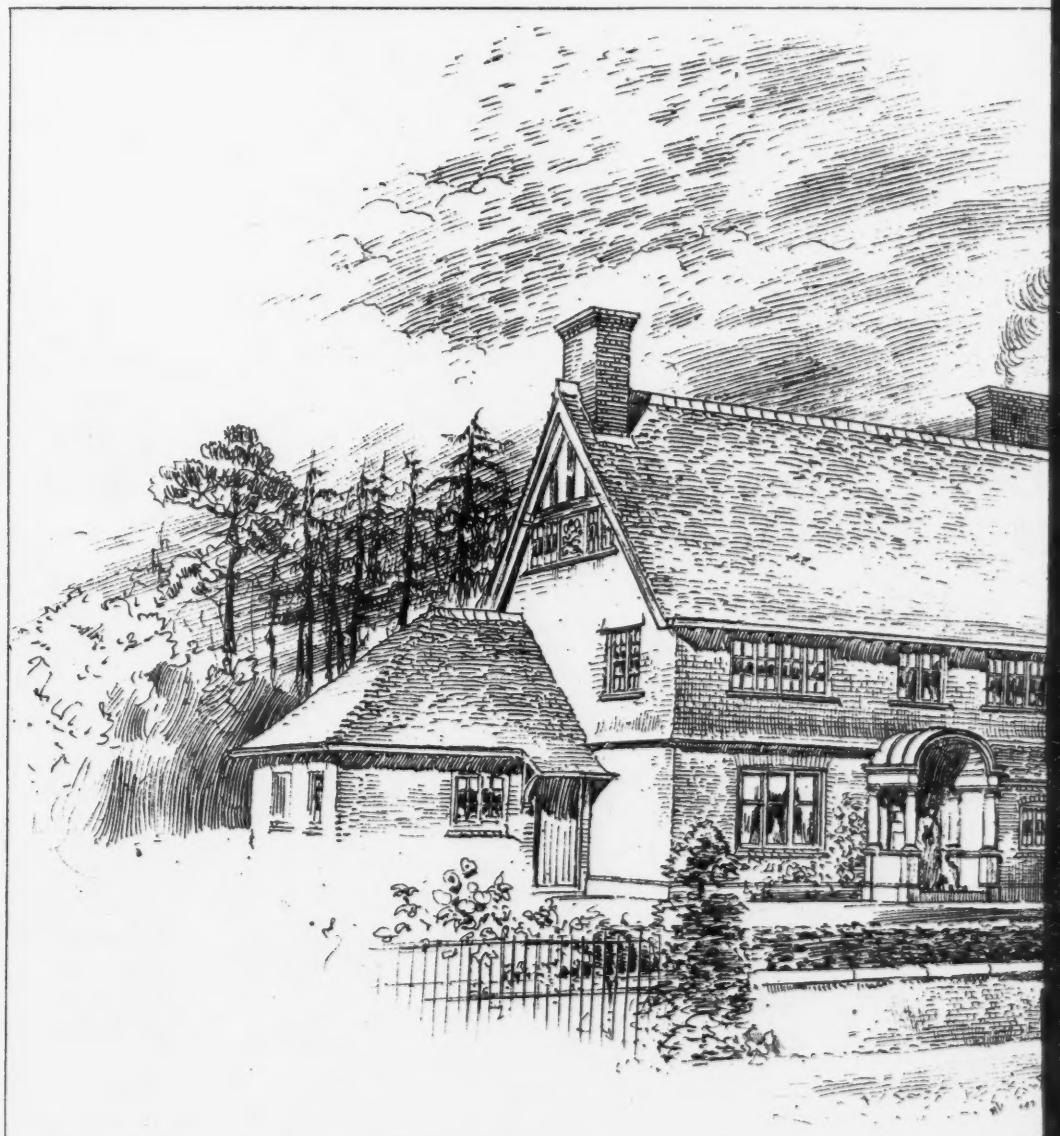
ELT ROOFIN

SILICA PAV

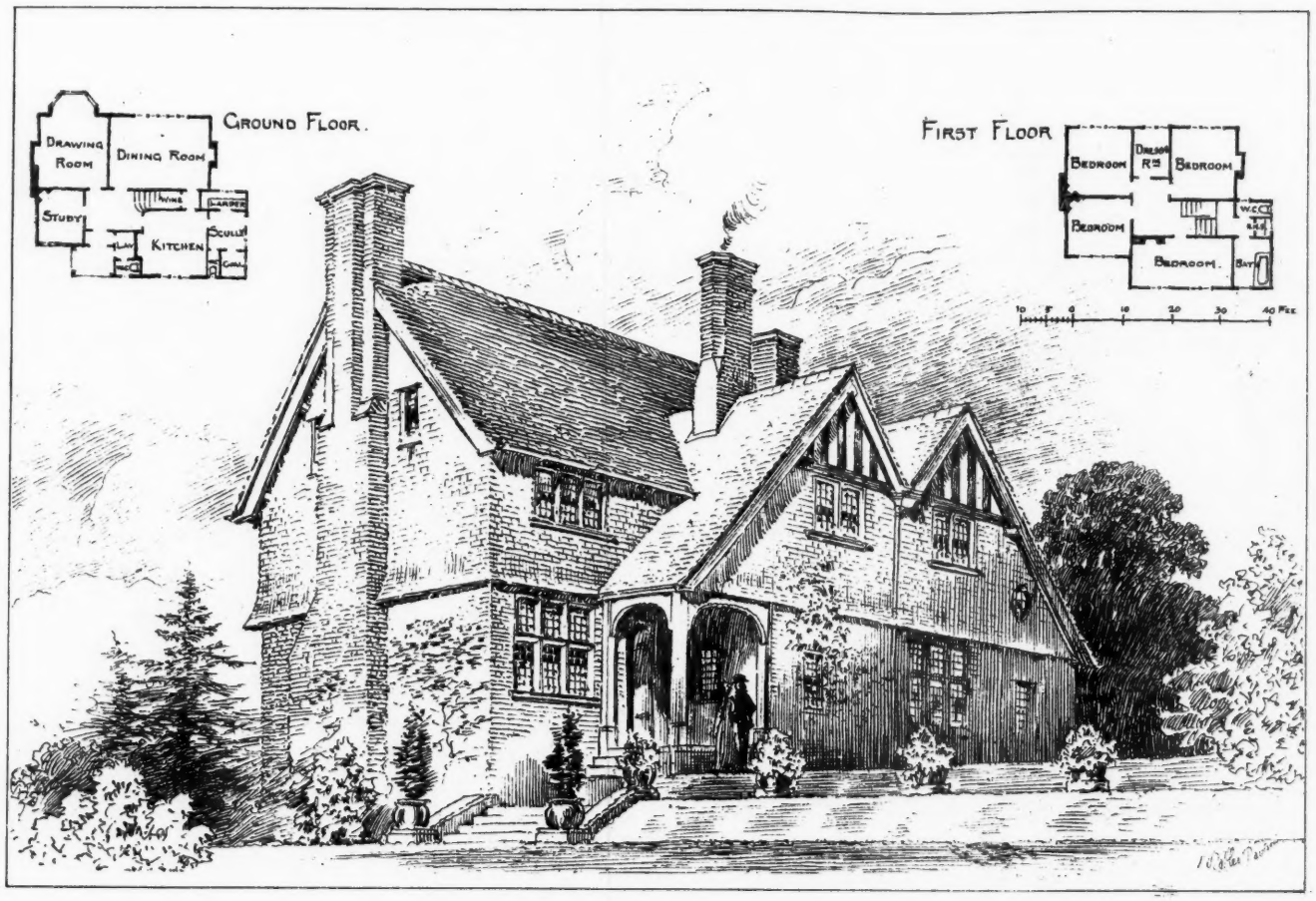
ALTE.

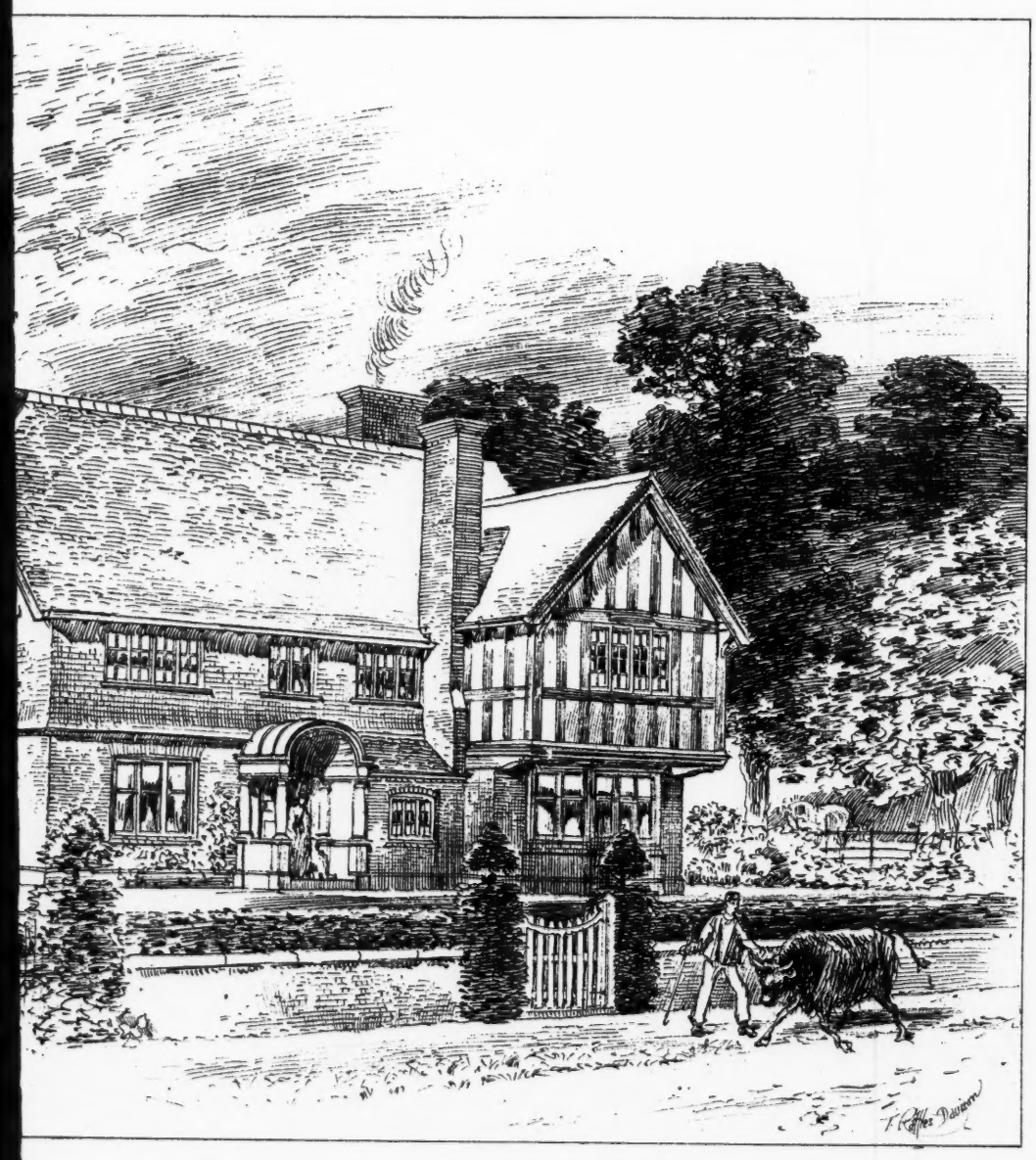


GROUND FLOOR



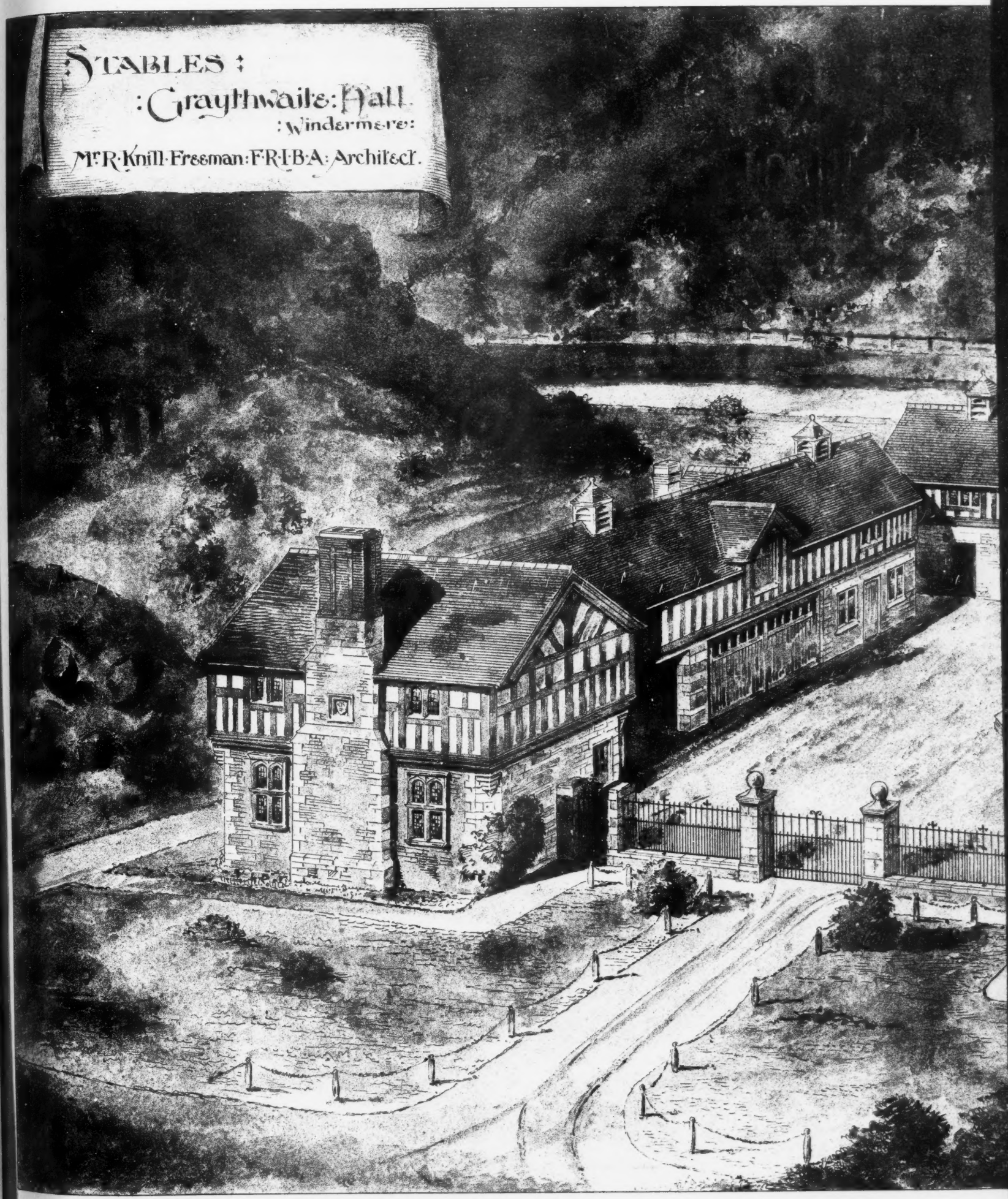
SMALL COUNTRY HOUSES.—Mr. Thomas W. Cutler,

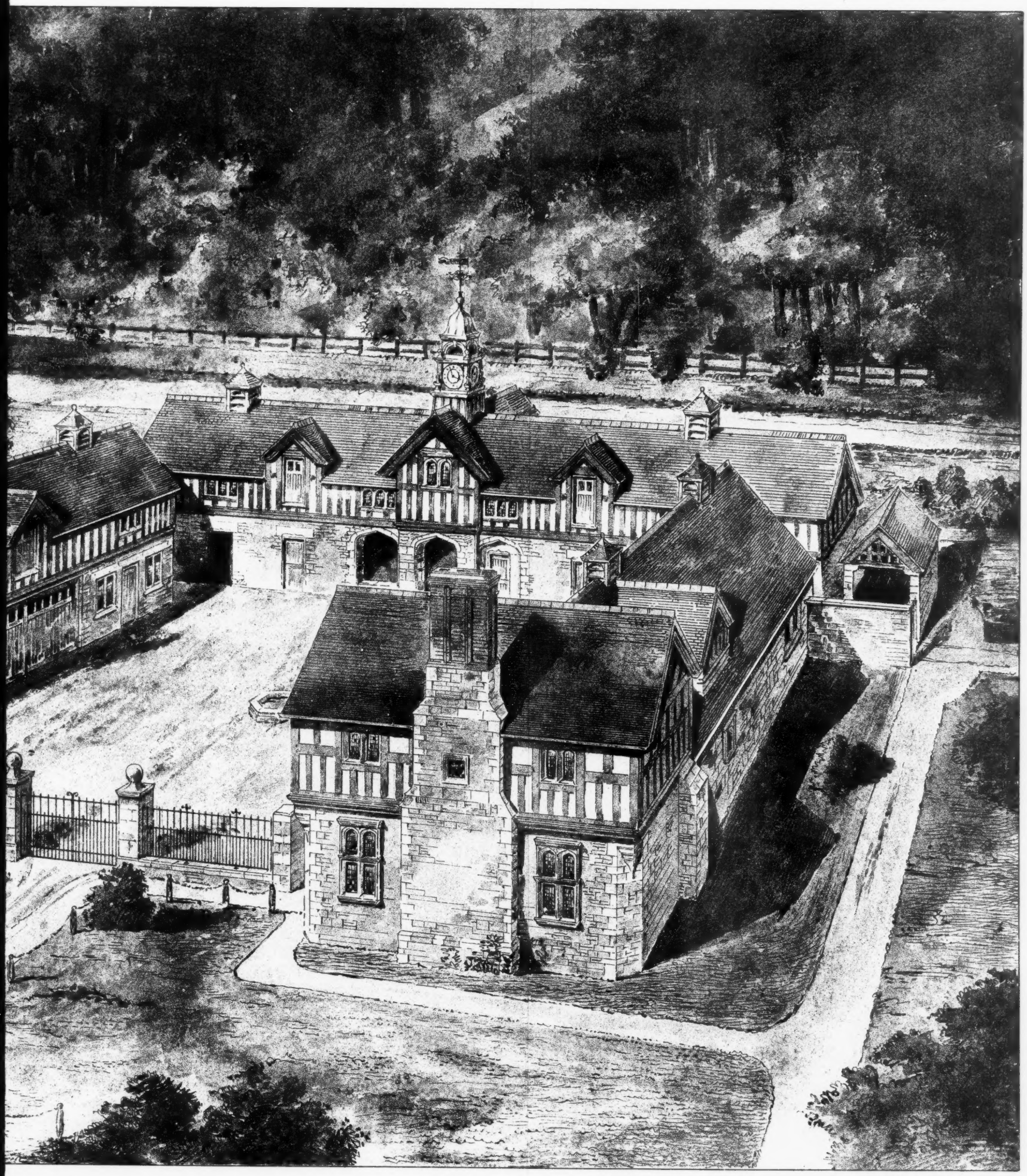




HOUSES.—Mr. Thomas W. Cutler, F.R.I.B.A., Architect.

PHOTO-LITHO. SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE. E.C.


STABLES :
: Graythwaite: Hall.
: Windermere:
Mr. R. Knill Freeman: F.R.I.B.A: Architect.

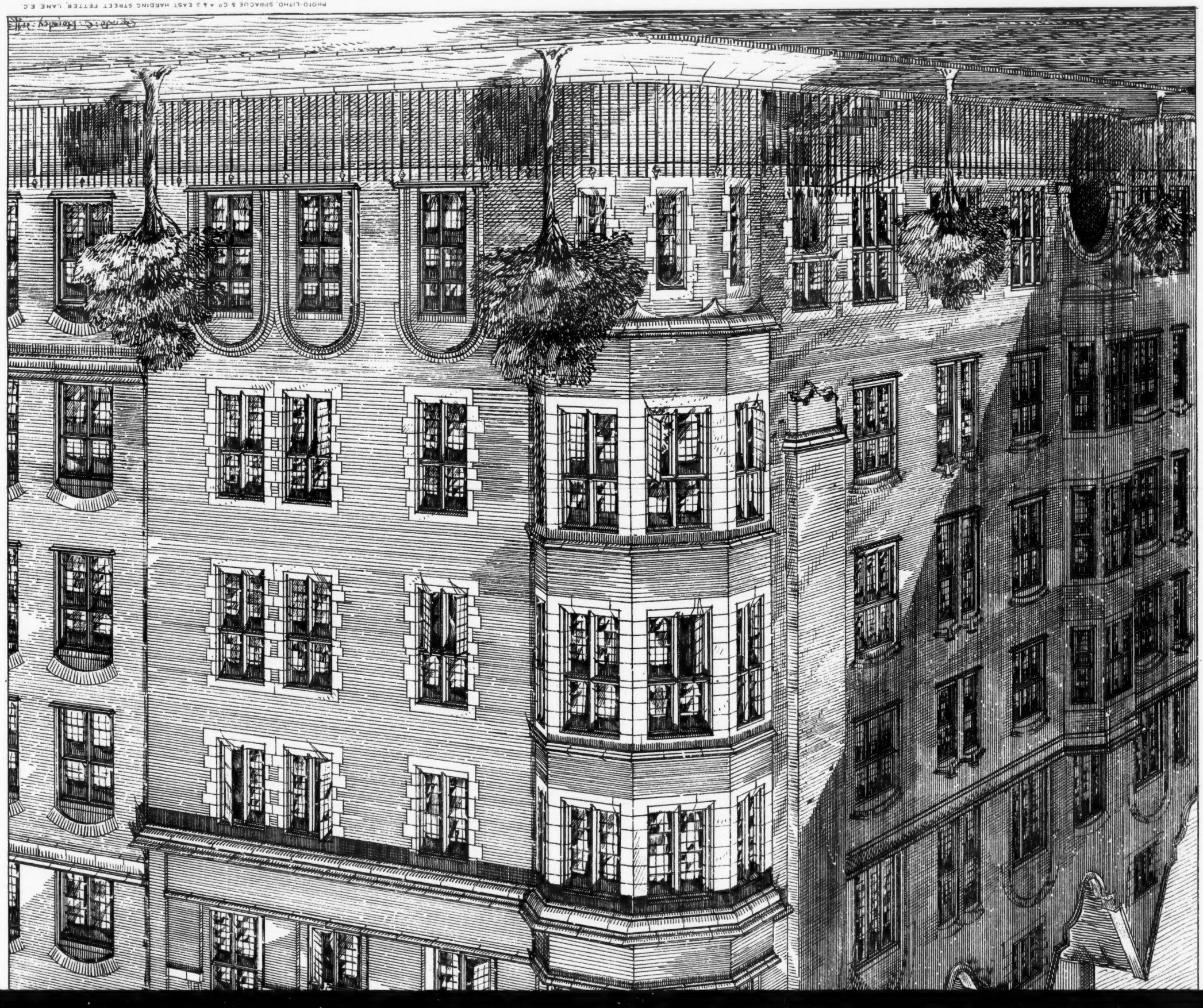


BEDFORD · COURT · MANSIONS:

FRONT to CHARLOTTE STREET AND
PART FRONT to TAVISTOCK STREET.

Allan : F: Vigers : Architect:

PHOTO-LITHO. SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE E.C.



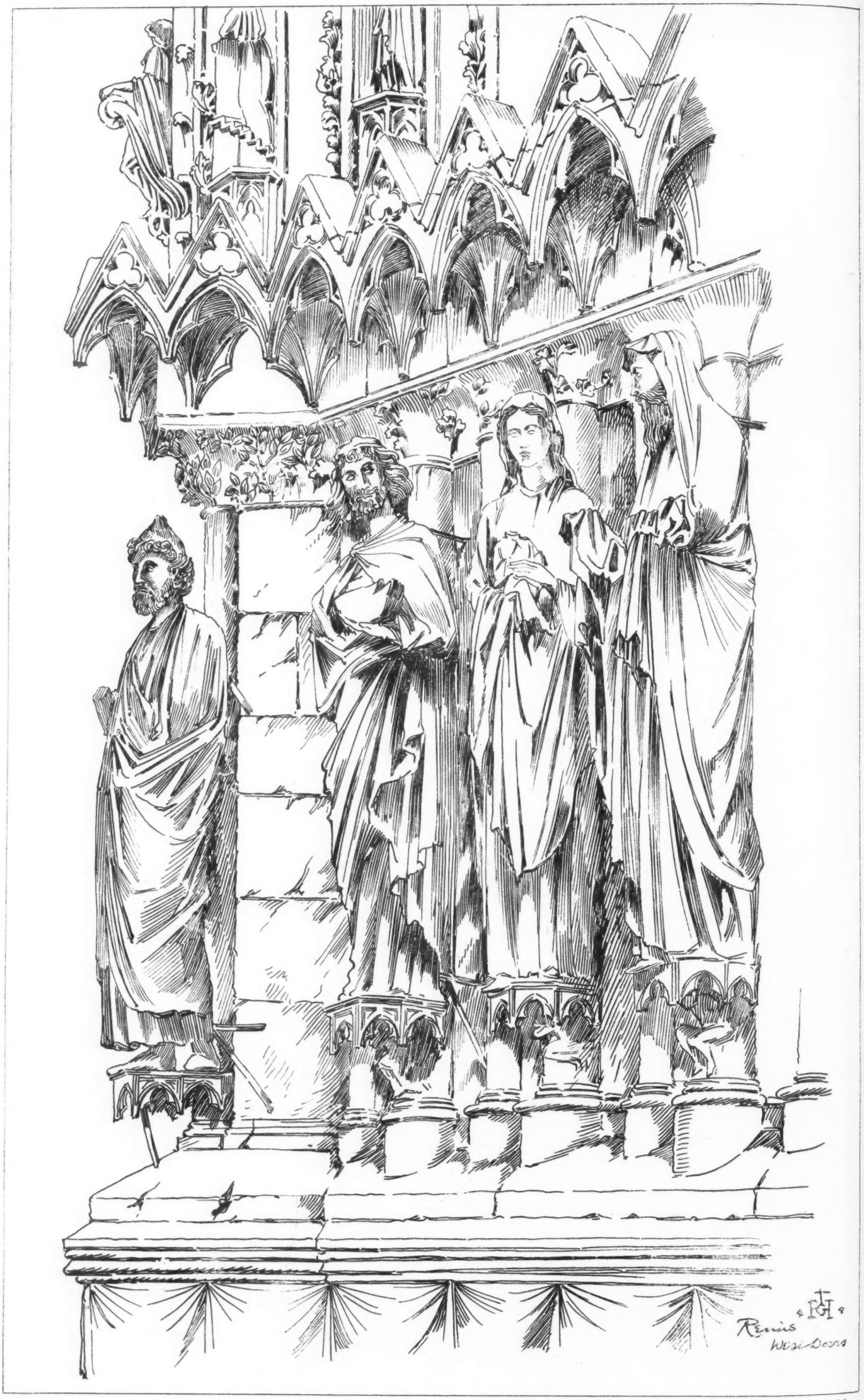


PHOTO-LITHO. SPRAGUE & Co. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

S. Etienne le Vieux:
Caen.

PHOTO-LITHO. SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE E.C.